PERCEPTIONS OF ACADEMIC WORKLOAD WITH PARTICULAR REFERENCE TO RESEARCH: A CROSS SECTIONAL SURVEY OF LECTURING STAFF AT THE PORT ELIZABETH TECHNIKON

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DECLARATION

I, THE UNDERSIGNED, HEREBY DECLARE THAT THE WORK CONTAINED IN THIS THESIS IS MY OWN ORIGINAL WORK AND HAS NOT BEEN SUBMITTED, EITHER IN ITS ENTIRETY OR IN PART THEREOF, AT ANY UNIVERSITY FOR A DEGREE.

SIGNATURE **DATE**

SUMMARY

Change characterises life in the early twenty first century and higher education is no exception. Higher education in South Africa is currently in a considerable state of flux which ultimately is actualised at institutional level. It is academic staff who encounter these changes first hand. Technikon lecturers, in particular, are faced with additional challenges not faced by their university counterparts - they have been called upon to change from a primarily vocational to an academic alignment as a result of technikons being given the right to award degrees.

This study conducts a cross sectional survey of academic staff at the Port Elizabeth Technikon to identify their academic workload, with particular reference to their research function. It also seeks to establish whether lecturers consider themselves to be adequately prepared for their research function.

A review of the literature reveals that lecturers in higher education are involved in a wide variety of activities, the main ones being teaching, research, service, and scholarship. The literature review also shows that in overseas institutions with missions similar to the technikons, lecturers experienced changes to their workload as a result of the restructuring of higher education.

The empirical study shows that academic staff at the Port Elizabeth Technikon have much in common with their international peers in terms of the changes and pressures that have been experienced. The work reality for lecturers at the named institution includes all the traditional elements associated with being academic: teaching, research, service and scholarship. Although research is a new function, this has been positively embraced by most staff and that in most cases lecturers consider themselves to be adequately prepared for this function. The

empirical study also shows that more than one third of the respondents do not support the institutional vision of becoming "the first choice technological university of South Africa". Further, the study shows that, in common with other studies, staff were of the opinion that the institution undervalues teaching and that research attracts more recognition and rewards. Finally, it shows that significant numbers of staff work in excess of 50 hours per week and carry teaching loads that are greater than the institutional guidelines.

Recommendations are made on the basis of these findings and a further avenue of research is suggested.

OPSOMMING

Verandering is 'n kenmerk van die lewe in die vroeë een-en-twintigste eeu en hoër onderwys is geen uitsondering nie. Hoër onderwys in Suid-Afrika ervaar tans 'n besonderse toestand van veranderlikheid, maar dit is uiteindelik op onderwysinrigtingvlak wat did tot verwerkliking kom. Dit is akademiese personeel wat hierdie veranderings eerstehands ondervind. In die besonder word Technikonpersoneel gekonfronteer met uitdagings waaraan hulle universiteitseweknieë nie blootgestel word nie – daar word van hulle vereis om van 'n primêre beroeps-oriëntering oor te skakel na 'n akademiese ingesteldheid as gevolg van die feit dat technikons die mandaat verkry het om grade toe te ken.

Hierdie studie het 'n opname onder akademiese personeel aan die Port Elizabethse Technikon gedoen om vas te stel wat die personeel se akademiese werkslading is, met besondere verwysing na hulle navorsingsfunksie. Die ondersoek poog ook om vas te stel of lektore van mening is dat hulle genoegsaam voorberei is vir hulle navorsingsfunksie.

'n Literatuuroorsig toon dat lektore in hoër onderwys betrokke is by 'n breë verskeidenheid aktiwiteite, waarvan die belangrikste onderrig, navorsing, dienslewering en vakkundigheid (scholarship) is. Die literatuurstudie toon ook dat in ander lande aan inrigtings met soortgelyke doelstellings as die technikons, lektore veranderings in hulle werksladings ondervind het as gevolg van die herstrukturering van hoër onderwys wat teen die einde van die twintigste eeu plaasgevind het.

Die empiriese studie toon dat akademiese personeel aan die Port Elizabethse Technikon met betrekking tot die veranderings en druk wat ondervind word veel in gemeen het met hulle

internasionale eweknieë. Die realiteit in die werkplek vir lektore by genoemde inrigting sluit al die tradisionele elemente in wat verband hou met die akademie: onderrig, navorsing, diens en vakkundigheid (scholarship). Alhoewel navorsing 'n nuwe funksie is, is dit deur die meerderheid personeel positief aanvaar en in die meeste gevalle is lektore van mening dat hulle vir hierdie funksie voldoende voorberei is. Die empiriese studie toon ook dat meer as een derde van die respondente nie die institusionele visie om "die eerste-keuse tegnologiese universiteit van Suid-Afrika te wees" ondersteun nie. Voorts toon die studie soos ook in ander studies, dat personeel van mening was dat die inrigting onderrig geringskat en dat meer erkenning en belonings aan navorsing gegee word. Laastens toon dit dat 'n beduidende aantal personeellede meer as 50 uur per week werk- en onderrigladings dra wat meer is as die riglyne van die inrigting.

Op grond van hierdie bevindings word aanbevelings gemaak en 'n verdere navorsingsrigting voorgestel.

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LIST OF ABBREVIATIONS USED

APA	American Psychological Association
B TECH	Baccalaureus Technologiae
CAEs	Colleges of Advanced Education
CATEs	Colleges for Advanced Technical Education
CHE	Committee on Higher Education
CTP	Committee of Technikon Principals
D Tech	Doctor Technologiae
FTEs	Full Time Equivalents
HE	Higher education
M TECH	Magister Technologiae
NQF	National Qualifications Framework
PE	Port Elizabeth
SAQA	South African Qualifications Authority
SERTEC	Certification Council for Technikon Education
SSR	Student staff ratio
THES	Times Higher Education Supplement
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America

1.1 INTRODUCTION

If a single word were to characterise the *zeitgeist* of the late twentieth century, and indeed, the early twenty first, many would suggest "change". In fact, as one recent television advertisement aptly put it "change is the only thing you can depend on!" Thirty years ago, even then, Alvin Toffler (1970, p. 12) in his best seller *Future Shock,* stated, "Change is avalanching upon our heads and most people are grotesquely unprepared to cope with it". Whilst this may seem extreme, many of Toffler's prognostications have proved correct and few would argue that many people are indeed unprepared for change, and some are even paralysed by it.

Change is not discriminative and has permeated every aspect of society: from communication to employment, health care to lifestyle, politics to religion. Higher education is no exception. Globally, higher education (HE) has seen a number of changes, perhaps the most far reaching of which is the soaring demand resulting in a massive quantitative expansion. Coupled with the increase in the number of students in HE is a serious decline in the unit of resource, and in most countries educators and administrators are having " to do more with less". The change is not only quantitative, but qualitative as well, as evidenced by the increased diversity of students. In the face of such change, it is inevitable that there are questions about the quality and relevance of higher education courses and indeed, the very quality of student learning. This in turn, has brought about, in some instances, quite radical transformations to the management of teaching and learning. Change, therefore, has an infectious nature: it propagates more change.

Nationally, significant change has been experienced in higher education in South Africa. Indeed it could be said that HE in South Africa is at a critical crossroads in its evolution. Not

only does it have to align itself with the global changes that have taken place, but it also has to meet the needs of its own emerging economy and redress the inequities of previous apartheid practices. To this end, new legislation has been introduced to address these issues, namely: the Education White Paper 3, the Higher Education Act of 1997 and the South African Qualifications Authority (SAQA)Act of 1995. In addition to the changes that have resulted from legislation, the entire structure of the higher education system is currently under review by the Council on Higher Education (CHE) (CHE, 2000; CHE, 2000a). More change can, therefore, be anticipated.

Technikons, as a specific sector of higher education, have not escaped this climate of change. Not only have they had to attune themselves to the initiatives of the new education dispensation, but they have been transformed into degree awarding institutions - with far reaching implications.

Ultimately, global and national change is actualised at institutional level. At the rock-face of this apparent turmoil are the lecturers. It is they who tangibly encounter these changes first hand, the effects of which may involve their personal life, their academic workload, and their working conditions. The effects may be irritatingly trivial or disturbingly profound but are essentially of great consequence. New demands are being placed upon teaching staff: they are expected to know how to teach a very heterogeneous student body, to be "academics" and to conduct research and publish, and even to be entrepreneurial in their undertakings.

It is often said that within an organisation employees constitute the most valuable and expensive of all resources, and as such, they need to be valued and developed to their full potential. Academic staff are critical to the quality of the teaching and learning environment

and to the successful realisation of institutional visions and missions. This context of change and its effects on technikon lecturers, constituted the point of departure for this study.

1.2 FORMULATION OF THE RESEARCH PROBLEM

This study proposed to identify the work activities of academic staff at the Port Elizabeth(PE) Technikon, with particular reference to their research function. Additionally, the study attempted to establish whether academic staff consider themselves adequately prepared for this function.

In order to achieve this, the following sub-problems needed to be answered:

- What are the changes in higher education that impact upon the work activities of academic staff?
- What are the functions of academic staff at the PE Technikon?
- What is the extent of research involvement of academic staff?
- What are the barriers to research involvement?
- What are the developmental needs of academic staff with respect to research?

1.3 AIMS AND OBJECTIVES OF THE STUDY

The aim of this study was to determine the academic workload of lecturing staff at the PE Technikon, with special reference to their research function.

The objectives of this study were to:

- Review relevant literature on academic workload
- Determine the academic workload of PE Technikon staff
- Analyse, report and discuss the empirical data on the academic workload of PE Technikon staff
- Compare the empirical findings with findings derived from the literature study

- Make recommendations on possible research, developmental and other needs relating to the academic workload of PE Technikon staff.

In the next paragraph, concepts important to this study will be clarified.

1.4 DEFINITION OF CONCEPTS

For the purpose of this study, the following working definitions will apply.

Academic workload: this is a collective term for the totality of occupational activities (job functions) of a lecturer, it therefore includes teaching, research, service, administration, management and scholarship.

Academic staff: this is a collective term for lecturers employed at any post level.

Lecturer/lecturers if unqualified by the post level (e.g senior, principal), the word is used synonymously with academic staff. Alternatively, depending on the context, it may refer to the specific employment post level.

Faculty: one of the eight divisions of learning within the institution, headed by a Dean and subdivided into smaller departments. The word is not used in the American context of academic staff, except when discussing the American literature on faculty workload studies.

Teaching: is used in the broadest sense of the word and is interpreted as all the activities associated with teaching, not just actual classroom teaching.

Research: any scientific enquiry aimed at either discovering new knowledge, ways of doing things, or solving practical problems and which requires some form of formal research proposal or protocol.

1.5 DEMARCATION OF THE RESEARCH

This study was limited to the opinions and perceptions of full time, permanently appointed lecturers, senior lecturers and principal lecturers regarding their workload during the period

January 1999 to April 2000. It was restricted to these categories of staff at the College and Main Campuses of the PE Technikon. It did not investigate workload related issues such as job satisfaction, stress, evaluation of academic staff, or staff development. These issues may, however, be mentioned in the report.

1.6 JUSTIFICATION OF THE STUDY

The idea for this study originated from personal observation and an awareness of the extent to which the academic workload of the researcher had changed over the eight years since she was originally employed at the PE Technikon. This was accompanied by increasing apprehension regarding her adequacy to perform ever widening functions. Informal collegial discussions revealed a similar situation, with the additional concern about the pressure to conduct research. There was also a perception that academic staff, particularly those who were not involved in research, were undervalued by the institution.

A search of the Nexus database established that no similar research had been undertaken in South Africa. A search of the international literature showed that in the early 1990s the British Polytechnics and the Australian Colleges of Advanced Education (CAEs) had undergone similar changes to those recently experienced by the South African technikons. The findings of those studies would, therefore, be of importance to this study. Only one similar (but not identical) Australian study was found. Nevertheless, other literature yielded information relevant to the research problem, namely: changing conditions of work, increased workload and role complexity, pressure to do research and publish, and the consequent tensions between teaching and research functions.

Since human resources are so critical to any organisation, it would be advantageous for the institution to know how its academic staff were behaving, that is, what they were actually

doing in terms of their job functions and their opinions regarding institutional demands placed upon them.

The findings of this study could provide input for the following:

- To update job descriptions, ensuring that they remain current, applicable and relevant
- To inform the development of a staff appraisal system
- To contribute to a needs analysis for staff development
- To make suggestions that could be implemented to ameliorate any identified problems.

It is envisaged that the information could be utilised by the Rectorate, Department of Human Resources, Deans, and Heads of Departments at the institution concerned. This paragraph has described why this study was undertaken, the next section will supply a brief overview of the research design.

1.7 OVERVIEW OF THE RESEARCH DESIGN

1.7.1 The research approach or strategy

The research problem was investigated by means of a literature survey and an empirical, descriptive, cross-sectional survey, using a structured, self administered mail questionnaire as the data collection and generation instrument.

According to Leedy (1993, p.185), a descriptive survey is a research approach or strategy that "...looks with intense accuracy at the phenomena of the moment and then describes precisely what the research sees". Survey researchers perform two essential activities: they observe with close scrutiny and they make a careful record of their observations. In this context, the word "observation" is interpreted very broadly as being similar to perception, in the sense that the researcher becomes aware of data through some means of detecting them (Leedy, 1993).

In this study, the observation was undertaken mainly by means of a questionnaire.The nature of the research problem and sub-problems suggested that the descriptive survey would be the most appropriate research strategy, the rationale for which is indicated below (Dane, 1990; Fink & Kosecoff, 1998; Neumann, 1997).

- The research problem clearly required personal input from academic staff and the survey is ideally suited to this as it involves obtaining information directly from a group of individuals, by means of asking questions which are answered by the participants.
- The research problem required obtaining information about the lecturers themselves, their work functions and also their opinions. The survey is suitable for investigating behaviours, attitudes, opinions, knowledge, and characteristics of the participants.
- The survey is also useful when many variables need to be measured, and when the researcher needs to gather data from a relatively large number of cases .
- Finally, the goals of this study were descriptive for which the survey is ideal.

A self-administered mail questionnaire was used as the data collection instrument.

1.7.2 Research methodology

The following were important elements in the methodology of this study:

- The development of a suitable questionnaire to collect or generate data relating to the academic workload of lecturers. Attention was paid to avoid the common pitfalls of questionnaire design.
- The target population consisted of all academic staff at the PE Technikon who met the following criteria: *full time, permanently employment, lecturers,*

senior lecturers and principal lecturers, and the Main and College Campuses only.

- The questionnaire was pre-tested by eight academic staff who met the selection criteria. This was undertaken in order to identify any flaws in questionnaire design and to obtain input and suggestions.
- Administration of the questionnaire, which included a preliminary explanatory letter, the questionnaire itself, and follow up letters. The internal mail system of the institution was used.
- Data analysis and interpretation. Questionnaire responses were computerized by means of spreadsheet software, and the raw data analysed by the statistician of the PE Technikon using descriptive statistics. They were displayed initially as frequency counts. Cross tabulations were performed as deemed necessary. The results were displayed by means of tables and graphs.

1.7.3 Limitations of a survey

A drawback of using a questionnaire as the data collection instrument is a low response rate which can lead to biased results. This will be discussed in Chapter 5.

1.8 PROFILE OF THE REPORT

Chapter 1 provides a general orientation to the study, the research problem and sub-problems. This chapter introduces the aims and objectives of the study, its relevance or value, and the methods and techniques that were used to investigate the research problem. Important concepts and terms were also clarified.

Chapter 2 will review in detail the research design, methods and techniques that were used to gather and analyse the data.

The literature review will be reported in two separate chapters. **Chapter 3** will explore the general characteristics of technikon education from a variety of different perspectives in order to understand the environment in which academic staff find themselves today. In addition, this chapter will provide an overview of the PE Technikon, where this study was conducted. **Chapter 4** will describe the nature of academic work in higher education and include the findings of academic workload studies conducted in the United States of America. This chapter will also include a review of the major changes that are impacting upon academic staff and which are changing their workload practices.

Chapter 5 will present, analyse, interpret, discuss and evaluate the data collected by the questionnaire. The final chapter, **Chapter 6**, will present a summary of the research findings, the limitations of the study, conclusions, recommendations, and identification of possible avenues for future research.

The American Psychological Association (APA) method of in-text citation and references will be used throughout the report.

1.9 CONCLUSION

This chapter served to provide a general orientation to the study and the research problem and sub-problems. The aims and objectives of the study, its relevance, and the methods and techniques that were used to investigate the research problem were briefly outlined.

Chapter 2 will expand upon and provide greater detail of the research design, methods and techniques that were utilised in this study.

2.1 INTRODUCTION

The purpose of this study was to identify the work functions of academic staff at the PE Technikon, with particular emphasis on their research activities. This chapter will describe the research design and the methods that were employed to investigate the research problem and sub-problems.

2.2 RESEARCH DESIGN

2.2.1 Research approach

The research problem was investigated by means of a literature survey and an empirical cross-sectional survey, using a structured, self administered mail questionnaire as the data collection and generation instrument.

2.2.1.1 The literature review

The literature survey was undertaken to determine the most appropriate research methodology, and to obtain the necessary background information, in particular, existing research findings relating to the research problem. The information was also used to compile an appropriate questionnaire. The findings from the literature review will be reported in Chapters 3 and 4.

2.2.1.2 The survey approach

According to Leedy (1993, p.185), a descriptive survey is a research approach that "...looks with intense accuracy at the phenomena of the moment and then describes precisely what the researcher sees." The term "normative survey" is also used indicating that whatever is being observed at any one time is normal and could be similarly observed at another point in time. Leedy points to two essential activities that survey researchers perform: they observe with close scrutiny and they make a careful record of their observations. In this context, the word

"observation" is interpreted very broadly as being similar to perception in the sense of "being aware of data through some means of detecting them" (Leedy, 1993, p.187). In this study, the observation was accomplished by means of a questionnaire. A survey studies many people, known as respondents, all of whom answer the same questions. It utilises deductive reasoning in that it starts with a research problem, in this particular case an applied research problem, and ends with empirical measurement and data analysis (Neumann, 1997).

The nature of the research problem itself suggested that the descriptive survey would be the most appropriate research strategy, the rationale for which is indicated below (Dane, 1990; Fink & Kosecoff, 1998; Neumann, 1997).

- The research problem clearly required personal input from academic staff and the survey approach is ideally suited to this as it involves obtaining information directly from a group of individuals. In addition, the survey is suitable for investigating behaviours, attitudes, opinions, knowledge, and characteristics of the participants which were central to this study.
- The survey is an appropriate strategy if the researcher wishes to measure many variables, from large numbers of people (174 in this case) in a given situation at a particular time, as was the case in this study. A survey is also not concerned with the individuals themselves, but with the generalised statistics obtained from the data extracted from those individuals.
- The goals of this research study were descriptive for which the survey is ideal.

A self administered mail questionnaire was chosen as the most appropriate data collection instrument because of the number of participants involved, and the time available for this study.

Mail questionnaires have several drawbacks, the most significant of which are related to response rate and questionnaire design. Response rates are a major concern in survey research, and according to Neumann (1997) there is considerable disagreement about what constitutes an adequate return. Most researchers consider less than fifty percent to be poor, and over ninety percent excellent. Response rates of between 10% and 50% are common. Fink & Kosecoff (1998, p.6) point out that the desired response rate tends to be entirely subjective (unless done statistically) and the "higher the better". The design and construction of the questionnaire, as a data collection instrument, is critical to the outcome of the research. The data obtained is directly related to the questionnaire items and it is, therefore, essential that every effort be made to ensure that the items are true operationalisations of the concepts under investigation.

Particular attention was paid both to the response rate and questionnaire construction during the research design phase and will be described later.

A further drawback is that the data are self-reported which could result in misrepresentation on the part of the respondent. Theoretically it is possible to verify factual data such as sociological or demographic characteristics and even behaviours, but in practice respondents' self-reports are accepted without independent verification. Over and under-reporting are therefore possible. Opinions, defined as "an expression of a respondent's preference, feeling or behavioural intentions", on the other hand cannot be measured objectively and by their very nature cannot be verified independently (Dane, 1990, p.122).

2.2.2 Research method

2.2.2.1Data collection instrument

A search of the literature failed to disclose an existing instrument that could be used to

answer the research problem and sub-problems. It was, therefore, necessary to compile a dedicated questionnaire. The choice of items for inclusion was informed by the literature survey and extensive use was made of applicable sources (Fink & Kosecoff, 1998; Leedy, 1993; Neumann, 1997). To avoid the common pitfalls of questionnaire design, attention was paid to the following aspects:

- Clear, concise and unambiguous language
- An attractive and user friendly format
- Clarity of instructions
- The sequence of questions.

A questionnaire of 95 items was compiled (Appendix A). It comprised 92 closed questions or statements to which respondents were required either to select one response only, or to choose responses from a rating scale. Three questions were open-ended. The questions were grouped around a number of themes.

- The first section of the questionnaire (items 1 - 8) consisted of seven closed response questions and one open response question. They were aimed at obtaining information about the respondent's main job functions, the pressure to undertake research and upgrade academic qualifications, and current teaching obligations.
- The second section (items 10 - 35) investigated other job related functions and scholarship activities during the period January 1999 to April 2000. It consisted of statements accompanied by four scaled responses from which the respondent was required to select one.
- The third section(items 36 - 62) focused on research and research related activities. There was a variety of question types in this section: fixed yes or no answers, scaled

responses and one open response question. These items were aimed at obtaining information from the respondents about their formal research activities in the the period January 1999 to April 2000, their research interests, and their personal attitudes and opinions about research involvement.

- The fourth section (items 63 - 88) probed perceived barriers to personal research involvement relating to departmental, personal, and resource factors. This section comprised statements and scaled responses.
- The fifth section (items 89 - 95) obtained biographic information: post level, faculty of employment, length of employment at the institution, highest academic qualification and age.
- A final open-ended response question was included for respondents to contribute their own comments.

Provision was made at the end of the questionnaire for respondents to indicate if they wished to receive a summary of the research findings.

2.2.2.2 Target population

The study focused on academic staff at the PE Technikon. The following selection criteria were adopted:

1. *Academic post level*: lecturer, senior lecturer and principal lecturer
2. *Conditions of employment*: full time, permanently employed staff
3. *Place of employment*: Main and College campuses in Port Elizabeth.

The above criteria were adopted for the following reasons.

- It was considered that academic staff employed in these post levels and under the identified conditions of employment would be most representative of the spread and

variety of job functions within the institution. Junior lecturers and heads of department were excluded on the basis that the job functions of the former are normally quite narrow and involve teaching only, whilst the latter are much broader and include a considerable amount of institutional and departmental management. Part time and contract staff were excluded because they are usually employed in a teaching only capacity. Those in their first year of full time employment were also excluded as they are employed on a temporary contract.

- Lecturers employed at the George and East London campuses were excluded for reasons of expediency, namely the public mail service would have to be used to distribute the questionnaires and follow-up of respondents would be more difficult.

A list of all the staff that fulfilled the criteria was obtained from the Human Resources Department of the institution. The total number of personnel that met the identified criteria was 174. It was decided that there were too few participants to draw a sample and therefore all subjects were included in the survey.

2.2.2.3 Pretesting the questionnaire

The questionnaire was pretested in order to identify any flaws in the questions, to obtain input and suggestions, and to make any changes necessary to reduce possible misinterpretation of questions. Pre-testing was also aimed at improving the final response rate and reducing bias due to non-response, thereby improving validity.

Eight academic staff members who met the target population criteria were selected either on the basis of personal knowledge or by recommendation from the deans of faculties. Each of the eight faculties on the two campuses in Port Elizabeth was represented in the pre-test. The pre-testers were asked to complete the questionnaire and evaluate the clarity of the questions,

the accompanying letters and the instructions. An evaluation form (Appendix B) was included for completion. On the basis of suggestions made by the pre-testers certain amendments were subsequently made. Some minor syntax errors and ambiguous wording were identified and corrected. Additional items were included in the questionnaire as a result of feedback. Despite pre-testing, a typographical error in question 64 failed to be identified. As the staff who participated in the pre-test formed part of the target population, their completed pre-test questionnaires were discarded and these subjects all subsequently completed the final questionnaire.

The design, construction and pre-testing of the questionnaire, together with the selection of the target population completed the preparatory phase of the research design. The next stage involved the field implementation of the study by the administration of the questionnaire.

2.2.2.4 Administration of the questionnaire

The following steps were taken in the distribution of the questionnaire.

1. Ten days prior to distributing the questionnaire an introductory explanatory letter (Appendix C) was sent to each participant via the internal mail system. The purpose of this letter was to alert them to arrival of the questionnaire, and to inform them of its purpose. It was hoped that it would stimulate interest in the study, thereby potentially increasing the response rate.
2. The questionnaire, together with a second introductory cover letter (Appendix D) and a pre-addressed return envelope was sent to each subject, via the internal mail system.
3. A follow-up letter (Appendix E) was sent to all those subjects who had not returned their completed questionnaires by the return date.
4. A final follow-up, five days later, via a personal e-mail (Appendix F) was sent to all

those who still had not responded.

This completed the data gathering stage.

2.2.2.5 Data analysis and interpretation

Each respondent was assigned a number which also appeared on the questionnaire. The purpose of this was to check the returned questionnaires against the list of subjects and to make personal follow-up possible e.g, by telephone, letters and e-mails.

Questionnaire responses were entered onto a spreadsheet computer programme - Microsoft® Excel ® - and the data saved electronically. The responses to each question or statement were coded by assigning each a numerical value, the first response was allocated the value 1, the second 2, and so forth depending on the number of responses .

The responses to the open-ended items, 8 and 51, were entered as the value given by the respondents. The responses to the open-ended item 95, which were qualitative in nature, were analysed separately and grouped according to the main theme of their content.

On the advice from the statistician of the PE Technikon, the raw data were analysed using descriptive statistics by means of the programme Statistica®, and displayed initially as frequency counts.

The statistician performed the initial frequency counts for each response. As the initial results were analysed, it became obvious that there had been some errors of data entry. In response, 20% of the questionnaires were randomly selected to be re-checked. Within this group, errors were again identified, and it was decided to re-check all questionnaires. This was done and the mis-entries rectified.

The statistician repeated the frequency counts, which were analysed and further statistics performed as requested.

The results of the data analysis and their interpretation will be described in Chapter 5.

In summary, this subsection has reviewed the methods and techniques that were used in this study. In any research project the ethical treatment of the respondents and the data is of paramount importance, this will be discussed in the following paragraph.

2.3 ETHICAL CONSIDERATIONS

During the research design and the data collection phases it became obvious that there were a number of ethical issues that would need careful addressing.

1. The nature of the research and the questionnaire content could be sensitive to staff members. It was vital, therefore, to guarantee complete confidentiality and to inform them that the research was initiated solely by the researcher and not mediated in any way by the institution. These assurances were conveyed in the introductory letters. The reason for the identification number on the questionnaire was also explained.
2. All data entry was performed by myself and once the study was completed the questionnaires were mechanically shredded. This was conveyed to the participants.
3. The statistician suggested that a better response rate might be achieved with the cooperation of the deans of faculties who could request their staff to respond. This was rejected on the basis that it was suggestive of coercion, which is ethically unacceptable. It might also lead to indiscriminate responses, and biased results.
4. Permission was obtained to use the internal mail delivery system, and to use and access information specifically relating to the PE Technikon.
5. Although use was made of institutional facilities (e.g Reprographic Department), all costs were paid by the researcher.
6. During data entry,(as indicated previously), it became obvious that this had been less

than perfect and ethically it was unacceptable to leave the data as it was. By re-checking all the responses in every questionnaire every effort was made to ensure correct data.

2.4 CONCLUSION

This chapter has reviewed the approach, methods and techniques that were used to investigate the research problem. In addition, ethical issues were identified and their treatment outlined.

In order to understand the work environment of academic staff at the PE Technikon, it is important to appreciate the nature of technikon education. This, together with an overview of the PE Technikon itself, will be addressed in the following chapter.

3.1 INTRODUCTION

The evolution of the technikon movement, and in particular more recent developments, has had a significant influence upon the functions and work activities of the academic staff employed within this sector of HE in South Africa. This chapter has two aims:

1. To explore the general nature of technikon education from a variety of different perspectives in order to understand the environment in which lecturing staff work
2. To provide an overview of the PE Technikon where this study was conducted.

3.2 THE HISTORY OF THE TECHNIKON MOVEMENT

The evolution of the technikons from their earliest origins in the late nineteenth century up to 1985 was documented by Dr. Alan Pittendrigh in a doctoral thesis, an edited version of which was published in 1988 (Pittendrigh, 1988). This book constitutes the main source of information for the review that follows and to prevent repetition there will be a final reference only.

The origins of the technikons can be traced back to the technical colleges and before that to the technical institutes of the early part of the 20th century. The technical institutes in turn had developed from the mining industry and railways who both took the initiative in developing technical vocational education to meet the needs of their respective industries. These institutions, however, offered little more than basic trade training and scant secondary education.

The Higher Education Act of 1923 made provision for some of the existing technical institutes to be established as technical colleges. The colleges provided classes from Standard 6 to post-matriculation and in some cases even degree level work. A wide variety of courses was available including art, commerce, domestic science, engineering, mining, and printing.

Soon, a need was recognised to train people in commerce and industry at a tertiary level but not in the universities. This was realised in the Advanced Technical Education Act of 1967 which made provision for six of the technical colleges to be transformed into Colleges for Advanced Technical Education, or CATEs as they came to be called.

The CATEs focused on advanced technical training with an emphasis on practical training, from Standard 10 to a level somewhat below that of the universities. They were, therefore, somewhere between the technical colleges and the universities. Ironically, the then Minister of National Education clearly stated that these new colleges would not develop into technological universities.

In 1974, the report of the Commission of Inquiry in the Universities was tabled in Parliament. It contained important statements concerning the CATEs:

- They were institutions on a par with and not below universities
- The differences between CATEs and universities lay in their respective functions, which in turn would delimit the position each occupied in tertiary education
- They emphasised the practical application of knowledge rather than the acquisition of knowledge for knowledge's sake.

The name College for Advanced Technical Education was contentious as it was not well understood by the general public, nor indeed by Parliament. In 1979 an amendment to the Advanced Technical Education Act of 1967 made provision for the new name of "Technikon". This was the first milestone in the evolution of the technikons (Pittendrigh,1988). The name technikon was chosen specifically to convey the uniqueness of these institutions within the higher education sector. Their prime function was the provision of career focused education in contrast to universities which have a more academic and

research mission (Strydom, 1996).

In 1993 an amendment to the Technikons Act heralded what is arguably the most significant landmark in the modern history of the technikon movement: that of allowing technikons to award degrees.

3.3. THE NATURE OF TECHNIKON EDUCATION

Technikons are tertiary education institutions whose programmes are aimed at preparing people for specific occupations in order to meet the human resource needs of both the immediate community and the wider economic needs of the country as a whole. The Committee of Technikon Principals (CTP) (1992; 1994) notes that although the inclusion of degrees in the last decade has resulted in a broadening of scope, their mission and aims have remained essentially the same, viz:

- The provision of formative education. In common with other tertiary institutions, technikons have the task of promoting the full and complete development of their students. This is achieved through curricular and extra-curricular programmes
- Technikon education focuses on the preparation of students for entry into a particular career. In order to do so, the curricula and qualifications must be designed and geared to the needs of the specific industry in mind. This requires very close collaboration with employers and professional bodies
- The practice and transfer of technology through instruction, research, development and the provision of technologically oriented services.

According to the Department of National Education (1988) and SERTEC (1989) there are a number of distinguishing characteristics of technikon programmes and qualifications, viz:

- Immediate usefulness - the student can be productively employed upon qualification

- All programmes include an element of co-operative education which involves a combination of theoretical education on campus and experiential training in industry. This results in a very close liaison between student, technikon, and industry
- Unique to technikon education is the Certification Council for Technikon Education (SERTEC) which is a statutory body responsible for ensuring the quality, uniformity, and standards of all technikon programmes, *inter alia*, curricula, examinations, and the issuing of technikon certificates.

There is little doubt that technikons can rightly be regarded as the principal providers of quality, career focused education. According to Strydom (1996), a number of achievements substantiate this:

- The dramatic increase in student numbers in this sector of HE
- The increasing recognition given by overseas institutions, evidenced by co-operative ventures such as collaboration in research, staff and student exchanges, and the franchising of overseas degrees at some of the technikons
- The increasing diversity of formal and non-formal demand driven courses
- The recognition by government, industry and professional bodies by supporting the initiative for being given degree awarding status
- The effective functioning of SERTEC.

Technikons award a diversity of qualifications, shown in Table 3.1. The B, M, and D Tech degrees have replaced the National Higher, Master's, and Laureatus Diplomas respectively. The hierarchical structure allows for multiple exit points, although this will depend on the particular qualification. Most students qualify with a National Diploma. The B Tech is optional, admission to which is usually via a National Diploma (CTP, 1994).

Table 3.1 Qualifications awarded at technikons

Qualification	Years of study
National Certificate	1
National Higher Certificate	2
National Diploma (ND)	3
Baccalaureus Technologiae(B Tech)	4
Magister Technologiae (M Tech)	5
Doctor Technologiae (D Tech)	6

3.4 THE RESEARCH FUNCTION OF TECHNIKONS

3.4.1 Historical overview

A review of the history of the technikon movement shows that even in the early years of the CATEs the principle of research was recognised. It was, however, restricted to staff and not students. In 1979 it was accepted that a technikon qualification could be obtained by means of research. By this time the technikons had already discussed the extension of their functions into the area of research and it had been agreed that they would be involved in applied and developmental research, and research into technikon teaching (Pittendrigh, 1988).

The nature of technikon research will be outlined in the next section.

3.4.2 The nature of technikon research

Since one of the aims of technikon education is the practice of technology, it is logical that research also should be directed towards supporting and promoting this end. The CTP (1989, p.5) gives the following description of technikon research as the practice of technology:

> *... the systematic activity whereby existing knowledge acquired through research and/or practical experience is utilised and in terms of which services, processes, systems, materials, products or appliances are designed, evaluated and adapted with a view either to implementing them in practice and/or*

manufacturing or improving them.

Technikon research is thus primarily concerned with problem solving in industry and should lead to tangible results e.g. products and processes. It is this fundamental utilititarian orientation that distinguishes technikon from university research. This also points to a different value system in comparison to pure scientific research. Whereas the criterion for successful research in the pure sciences is publication, this is not necessarily the case in technikon research (Department of National Education, 1988; CTP, 1989).

The nature of technikon research could, therefore, be summarised as having pragmatic aims and values.

3.4.3 The research environment at technikons

As has been indicated, research had long been recognised as one of the functions of technikons, albeit a low priority. Whilst teaching remains the primary function of technikons, greater emphasis is now being placed on their research responsibilities (CTP, 1989). This is particularly so since the introduction of degrees. Various authors (Blankley & Van Vuuren, 1995; Conlon & Humphreys, 1995; Pietersen, 1995; Snyman, 1995) have identified a variety of impediments to research development at technikons:

- Poor physical facilities, e.g laboratory facilities and equipment
- Insufficient numbers of qualified students
- High teaching loads which do not allow staff the time to engage in research
- Lack of suitably qualified and experienced staff.

Pietersen (1995) suggests that research output is determined by a combination of individual and organisational factors. A high research output is the result of both individual research readiness and a facilitative research culture at the institution. He noted the following negative

factors relating to the individual lecturer:

- Absence of research expertise and competence
- Lack of research supervisory abilities
- A personality unsuited to research, the ideal researcher being someone who is critical, independent, investigative, and innovative
- "Teacher types" - these are essentially compilers, rather than researchers

Organisational or environmental deterrents include:

- Lack of funds for research positions
- Inadequate and insufficient research training for academic staff
- Lack of time due to high teaching loads and increased administrative responsibilities
- The past history of the technikons which focused almost exclusively on teaching
- The bureaucratic nature of technikons as organisations, which hampers rather than promotes research. By comparison, universities have a more professional and collegial structure which is conducive to research.

Overcoming these barriers and promoting the development of research capacity and culture is therefore critical. Several authors (Conlon & Humphries, 1995; CTP, 1998; Pietersen, 1995; Van Rensburg, 1995) have put forward suggestions:

- The provision of staff development to address the lack of staff expertise. It is, however, cautioned that this is not a universal panacea and should only be regarded as a short to medium term solution
- The need for a paradigm shift from a pure teaching culture to one of teaching, learning, and research - this, however, should not be at the expense of the primary function of the provision of career education and training

- Implementation of explicit contracts of employment, together with staff development and evaluation schemes in which there is the expectation that research and scholarship are recognised as part of the normal professional activities of academic staff.

In addition, both Pietersen (1995) and Van Rensburg (1995) issue stern cautions to upper management: an undifferentiated and blanket appeal to academic staff to become competent researchers overnight will not work. Little will be achieved unless individual lecturers have an enthusiastic belief in the value of research. Expressed differently, it is of vital importance that academic staff personally "buy into" their research involvement and make it their own rather than being dictated to by management.

Section 3.3 and 3.4 of this chapter have outlined the functional tasks of technikons namely, teaching, research, vocational preparation, and community service. These roles also characterise universities which, in section 3.5, leads to a discussion of the university status of technikons in South Africa.

3.5 ARE TECHNIKONS UNIVERSITIES?

3.5.1 Background

The answer to this question is complicated and is not easily answered with a simple yes or no. There has been considerable debate on this issue for quite some years. In 1997 some technikons issued statements in the public media indicating that they would be changing their names to include the word university. The question of a change in nomenclature had been discussed previously by the CTP. In this instance, however, the public statements made by these technikons proved to be premature as the CTP subsequently resolved later that year to retain the technikon name whilst the matter was under review (CTP, 1997). In August 1998 the CTP resolved that it would be premature to consider a name change (CTP, 1999). It has

subsequently placed a moratorium on the issue until the outcome of the CHE "Size and Shape" Report on Higher Education (D.W.Sharwood, personal communication, 6 June, 2000). The next section of this chapter will review the definition and characteristics of universities.

3.5.2 Characteristics of universities

Many definitions exist to describe a university - some traditional and some modern. Clarification is difficult since the title is frequently specified by legislation and therefore differs between countries.

The Concise Oxford Dictionary (1976, p.1272) defines a university as follows:

> *Educational institution designed for instruction or examination or both, of students in all or many of the more important branches of higher learning, conferring degrees in various faculties ...*

A short historical review may serve to clarify the issue, particularly in terms of the aims and functions of higher education and universities in particular. According to Venter and Verster (1986) the foundations of higher education can be traced back to Plato and Aristotle, but the antecedent of the university as it is known today dates more recently to the Middle Ages. It originated when special interest groups banded themselves into autonomous guilds for the purpose of promoting and protecting their interests. One such guild was that of teachers and students. The universities that originated during this time came into being to supply the need for professional people, namely, lawyers, theologians, teachers, medical doctors, and administrators.

It is relevant to note that despite this clear profession-oriented task, this was not the primary aim of the university. It aimed specifically at the broad general moulding of students into well rounded, cultivated scholars capable of reasoning and disciplined thinking, and with the

general ability to lead, transmit knowledge, and apply their skills to a profession. The main task, therefore, of the university was teaching and scholarly enquiry; research as it is known today was not an institutional function in those times.

This continued until the early nineteenth century. With the establishment of the University of Berlin in 1810 (founded upon the ideas of Von Humboldt), the new aim was a unity of knowledge transmission coupled with the search for new knowledge. Thus was born the research function of a university and by the middle of the century German universities were world leaders in research and publication (Venter & Verster, 1986). Although the idea of research spread to institutions in other countries, most universities in the United Kingdom (UK) and United States of America (USA) retained their traditional mission of teaching. This fact is echoed in the words of Cardinal Newman in 1852 (Newman, 1976, p.5) "That it is a place of teaching universal knowledge...If its object were scientific and philosophical discovery, I do not see why a University should have students..."

By the beginning of the twentieth century a few institutions began to move towards the German research model of a university. For most, however, teaching continued to be their primary function. It was really only after 1960 that the universities in the UK, Australia and USA started shifting back to the teaching and research model, characterised by the well known maxim of "publish or perish" (Elton, 1992; Venter & Verster, 1986).

During the earlier part of the twentieth century, yet another direction or path was mooted by the younger universities in the USA - that of emphasising the pragmatic aspect of knowledge. Teaching and research now had a social utility value aimed at solving the real problems of the environment. Thus, community service was established as a function of the university (Venter & Verster, 1986).

From this historical review it can be seen that the university has, over the centuries, adapted its tasks according to the prevailing social demands and conditions. Today its goals are not only directed at academic knowledge and research, but also at the broad formative development of students, professional preparation, and community service.

There are a number of authors today who consider that the traditional idea of the university is no longer appropriate to modern society. Brook (1999) stated that there was very little in the current literature about how a university was to be distinguished from other types of tertiary institution. He believed this to be due to the increased blurring of the traditional boundaries that characterise the different types of institution. Rowland (1996) took the view that the idea of what constitutes a university in current times lacks clear criteria. The recently released report of the CHE Task Team on the Size and Shape of Higher Education (CHE, 2000) does not differentiate between universities and other institutions; instead it refers to all of them simply as "institutions".

Brook (1999) mentioned a number of qualitative and quantitative characteristics of universities as identified by statutory bodies in the UK, New Zealand and Australia. The most relevant of these to this study are identified below:

- The power to award degrees in their own name
- A record of awarding post-graduate degrees for three years
- Firm evidence of significant research and of obtaining research funding, such research to be of international standards, reported and subject to peer review
- A primary concern with advanced learning, and at least 50% of equivalent full-time students enrolled for degrees and 3% of these in post-graduate, including doctoral degrees

- A close interdependence between teaching and research with staff being active in both
- 25% of staff expected to have both a PhD and research experience.

Two of these criteria, namely, staff qualifications and numbers of postgraduate enrolments, are similar to those identified by the CHE (2000a) as characteristics of institutions falling under the classification "Extensive masters and selective doctoral institutions".

This section of Chapter 5 has attempted to define the distinguishing characteristics of a university. This leads inevitably to a discussion of the university status of technikons.

3.5.3 The university status of technikons in South Africa

From the dictionary definition (cf. par. 3.5.2) technikons could be regarded as universities. Hoekstra (1999) however indicated that the matter should be viewed within the context of the Higher Education Act of 1993 which identifies three types of institution - universities, technikons and colleges - contributing to the envisaged single, co-ordinated HE system. Although the Act makes a statutory distinction between universities and technikons, it does not identify any criteria for differentiating between the two. Hoekstra (1999) argued further that because HE courses are to be programme focused in contrast to institution focused, the clear distinction in role and aim that currently exists will gradually be lost as institutions broaden their programme base. Missions are likely to change and this too will emphasise the blurring of institutional boundaries. Functionally, however, technikons and universities deliver the same products of teaching, research and community service. Both also confer degrees. Hoekstra (1999) made the point that the real distinguishing feature lies not in the kind or quality of the education provided by each institution, but in the regulations applying to academic standards and the issuing of certificates. Universities have the autonomy to provide education, determine academic standards and issue certificates in their own name.

This does not, however, apply to the technikons which are regulated by SERTEC.

The report of the CHE (2000a) identifies three classes of higher education institution. It is as yet unclear into which classification the technikons will fit. In response to the report, the PE Technikon has strongly advocated to be positioned in the 'Extensive Masters and Selective Doctoral' category (PE Technikon, 2000).

On the issue of a name change, the report of the CHE(2000a) also stated that institutions that satisfy certain criteria should be permitted to use the term "university" together with any qualifying term appropriate to their mission. The PE Technikon has strongly supported the use of the name 'Technological University' (PE Technikon, 2000).

This chapter has outlined the general background to the technikon environment, the following section examines the nature of the work expected of a lecturer in these institutions.

3.6 THE ACADEMIC ENVIRONMENT AT TECHNIKONS

3.6.1 Academic staff

Since their inception, it was recognised that the success of CATEs would largely depend on recruiting well qualified and competent teachers, selected primarily on the basis of their commercial and industrial experience rather than their academic qualifications (Pittendrigh, 1988). Recently, however, the situation has changed, motivated in no small way by the introduction of degree qualifications. In 1998 a report of the CTP (1998) highlighted the need to increase the number of staff with post-graduate qualifications, especially those with doctorates. Today academic qualifications are an important criterion for employment and promotion.

3.6.2 The nature of academic work

Whilst much has been written about the nature of academic work at universities, there is a

notable lack of literature relating to the technikon sector. In the early days of the CATEs, most staff appointments were purely in a teaching capacity. Although it was recognised that staff should become involved in research, this was exceptional (Pittendrigh, 1988). Today teaching undoubtedly still remains the primary function of most staff, but increasingly many are involved in research activities. A recent report of the CTP (1998, p.5) identified very specific functions and responsibilities expected of lecturers:

> *It is the inalienable right and responsibility of the lecturer to undertake research and development, scholarship and consultancy within the fields of their technological skills to support and enhance their service to the community.*

This statement illustrates that lecturers have functions far broader than teaching and which are similar to those of traditional university lecturers. Insofar as research is concerned, an earlier CTP report (1989) identified the following possible fields of research appropriate for technikon lecturers:

- Technological research related to the individual's field of expertise
- Research into teaching and learning in the adult
- Research into tertiary education activities, services and resources to provide more efficient training
- Research into the management activities of the technikon in order to establish an adequate infrastructure.

This report did concede, however, that such research may have very limited benefit to diploma students. Both reports (CTP, 1989; CTP, 1998) emphasised the broad benefits of

research involvement for all lecturers: increased self-confidence, a sharpened intellect, professional and peer recognition, an openness to new ideas and their possible application, and more authoritative teaching. In addition, continuing self-development is expected of every lecturer (CTP, 1998).

With the emphasis on the practice of technology, whether as a teaching or as a research aim, it is essential that lecturers have both a good theoretical knowledge and sufficient practical experience. The latter is necessary to ensure that education and training is both job-related and contemporary (CTP, 1994). For this reason it is critical that lecturers maintain regular contact with industry and commerce and time must be made available for this contact. In this regard the Department of National Education (1988, p.31) issued the following relevant caution: "Overloading technikon lecturers with lecturing should be guarded against."

This concludes the first half of this chapter, the aim of which was to explore the general character of technikon education and the academic environment in which lecturing staff work. The second half of this chapter concentrates on the specific environment of the PE Technikon.

3.7 THE PORT ELIZABETH TECHNIKON

This part of the chapter will examine important aspects of the PE Technikon and its academic staff. The references for the remaining sections will be cited near the end of the chapter.

3.7.1 General background

The PE Technikon was founded in 1881 when it was the Port Elizabeth School of Art, and by 1968 it had evolved into a CATE. Since 1979 it has been a technikon. The institution has four campuses: two in Port Elizabeth, one in George and a satellite campus in East London. There are eight faculties, each headed by a dean : Applied Science, Art and Design, Civil

Engineering, Building and Architecture, Commerce and Government Studies, Communication and Educational Studies, Computer Studies, Management, and Mechanical and Electrical Engineering.

More than 150 formal and non-formal courses are offered in a variety of different fields. Most students follow courses leading to the National Diploma qualification (shown in Table 3.2), but since 1995 the number of degree qualifications (shown in Figures 3.1 and 3.2), has increased significantly.

In 1999 history was made when a student in the Department of Chemistry, Applied Science was awarded the first D Tech. in the institution.

Figure 3.1 Undergraduate qualifications 1990 - 1999

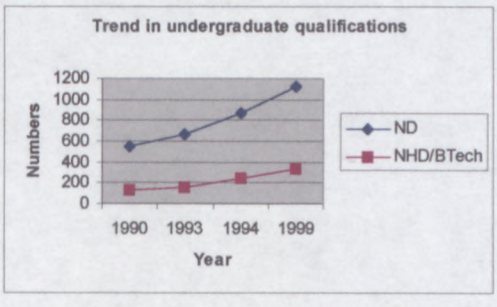


Figure 3.2 Postgraduate qualifications 1990 - 1999

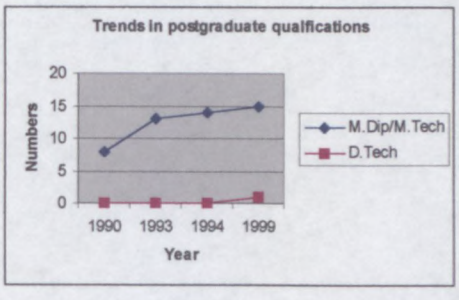


Table 3.2 1999 student enrolments by qualification

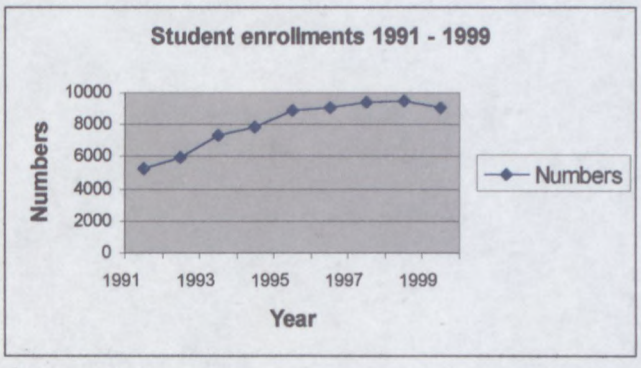
Qualification	%
National Diploma	88
B Tech	11
M & D Tech	1

Table 3.2 shows the numbers of enrolments (as percentages) in the different categories of academic qualification. It can be seen that only 12% of students were registered for degree and postgraduate degree courses, this figure is substantially lower than the figure of 50%

identified as a quantitative characteristic of a university (cf. par. 3.6.2).

Figure 3.3 shows that during the last decade the number of students has almost doubled.

Figure 3.3 Student numbers at the Port Elizabeth Technikon 1991 - 1999



By 1997 growth had stabilised, in 1999 it declined. This can be attributed to a low matriculation pass rate in the Eastern Cape and the very serious decline in the rate of enrolments in higher education that is being experienced nationally (CHE, 2000). The demographics of the student body have also changed: the number of white students has declined and there has been an increase in number of black students. The number of female students has increased and the ratio of male to female is now approximately 60:40.

3.7.2 Academic staff

This section will review the main conditions under which academic staff are employed: post structure, academic requirements and working hours. Other conditions of employment, e.g leave entitlements, which are irrelevant to this study will not be mentioned..

3.7.2.1 Post structure

In 1999 the institution employed a total of approximately 700 personnel, of which 265 were academic staff. This number has remained stable during the last three years. Academic staff are appointed in a hierarchy of posts: Rector, Vice-Rector, Dean, Head of Department, Principal Lecturer, Senior Lecturer, Lecturer and Junior Lecturer.

It should also be mentioned that technikons confer professorships following an *ad hominem* approach, based primarily on personal academic merit. The post structure of the PE Technikon does not provide for professorships at a separate post level. One of the criteria, however, is that the individual should be employed as a principal lecturer or above.

The number and level of posts available within a faculty are determined by the number of "staff points" allocated to the faculty, the calculation of which is complicated and beyond the scope of this report. Essentially it is based on the number of Full-time Equivalents students (FTEs) registered in the faculty.

The student staff ratio (SSR) is the number of students per academic staff member, and in this institution is reported as the Effective Subsidy Student Lecturer ratio. In 1999 the overall average across the institution was 24:1, this ranged from a low of 14:1 in Art and Design and Applied Science to a high of 44:1 in the Commerce and Management Faculties.

3.7.2.2 Academic qualification criteria for employment

It was previously mentioned that academic qualifications have now become an important criterion for employment and promotion. The following minimum qualification levels (shown in Table 3.3) are laid down by the institution.

Table 3.3 Academic qualification criteria

Post Level	Qualification
Junior lecturer	M + 3
Lecturer	M + 4
Senior and Principal Lecturer	M + 5
Head of Department	M+ 5

The distribution of academic qualifications in 1999 is shown in Table 3.4.

Table 3.4 Qualifications of academic staff in 1999(institutional statistics)

Qualification	%
ND/HND/B.Tech	52
Masters and Doctorates	48

According to the institutional statistics nearly 50% of the lecturers at the PE Technikon have higher degrees. In addition, 24% of staff were enrolled for master's or doctoral studies at technikons or universities. It is projected that in two years 72% of staff will have master's degrees and above, and within 4 years 21% will have doctorates.

New appointments are given a generic job description for their particular post level. It should be noted that this has happened only within the last two years. In addition some faculties draw up their own more specific job descriptions for staff. Currently there is no formal staff appraisal or evaluation system for lecturers. This is set to change and the intention is to introduce some form of performance management for academic staff in the future.

3.7.2.3 Working hours

No regulations exist regarding the number of hours a lecturer is expected to work per week. An estimate can be calculated from a lecturer's 'contact hours'.This is the number of hours per week of scheduled classroom contact. The institutional guidelines per category of post level are shown in Table 3.4.

Table 3.5 Guidelines for the number of contact hours according to post level

Post level	Contact hrs/wk
Lecturer	18 - 20
Senior lecturer	15
Principal lecturer	10

It should be noted that these hours represent actual contact teaching time only. For each

contact hour, an additional hour is allowed for other teaching related activities such as teaching preparation and the assessment of students. The guideline for the supervision of master's and doctoral students is an additional 2,5 hours per week per student. From these figures it can be deduced that a typical working week is approximately 40 hours, with the relative amount of time devoted to teaching being directly related to post level (D.W. Sharwood, personal communication, June 8, 2000). Average reported contact hours for 1999 were 19hrs, this ranged from a low of 12 to a high of 32.

The penultimate part of this chapter will review the vision and mission statements of the institution.

3.7.3 Vision and Mission statements

The vision and mission statements are of particular importance to academic staff. Not only must they "buy into" and take ownership of them, but perhaps even more importantly academic staff are critical to their successful implementation.

The website home page of the institution (Port Elizabeth Technikon, 2000a) announces : "The Port Elizabeth Technikon is a dynamic degree, diploma and certificate awarding Technological University". This is further expanded upon in its vision and missions statements.

Its vision is "...is to be the First Choice Technological University in Southern Africa".

The mission " is to develop career competencies and to apply and extend knowledge in order to:

- Provide optimal career orientated learning opportunities to meet the professional and technological needs of Southern Africa
- Deliver graduates with the necessary technological, management, entrepreneurial and

social skills to solve problems and implement innovative ideas in their chosen fields,

- Promote solution centred research and to advance knowledge and scholarship in collaboration with all stakeholders in the service of the community, commerce and industry."

This illustrates that it is not just a teaching institution, but it also applies and extends knowledge through its research function. Its community service function is highlighted as is its vocational and profession aim. It is clear too, that it regards itself as a technological university in all but official name.

Finally, this chapter will give a broad overview of the research activities of the institution. It is not intended to give detailed information since this is beyond the scope of this report.

3.7.4 Research activities

The research philosophy of the institution is to be at the forefront of applied research not only in the Eastern Cape, but also within Southern Africa. In keeping with the ethos of technikon research it focuses on applied and developmental research which is relevant to the needs of industry and the community. Interdisciplinary research involving industry, technological and business faculties, the human sciences and art is encouraged and a number of highly focused and specialised, multidisciplinary research groups have been established. It is beyond the scope of this study to detail the extensive research activities of this institution. The following are just a few of the selected research areas:

- The Manufacturing Technology Research Centre
- The Chemistry Research Group which specialises in catalytic air oxidation, environmental technologies and organic electrochemical synthesis
- The Material Resource Centre in conjunction with Willards Batteries

- Information Security
- Renewable Energy
- Mass Customisation in Marketing

(PE Technikon,2000a; PE Technikon, 2000b; PE Technikon, 1999; Snyman, 2000 ; Snyman, 2000a).

3.8 CONCLUSION

This chapter has reviewed the history and characteristics of technikon education to show how they have shaped the academic environment in which lecturers work. Technikons have evolved from institutions offering trade training only to becoming the leading providers of career focused and professional higher education, offering both diploma and degree qualifications.

Technikons share certain common characteristics with universities, notably the functions of teaching, research and community service, and the conferring of degrees upon graduates. They have not yet, however, met some of the quantitative and qualitative characteristics of universities mentioned earlier in this chapter. The most notable of these are the power to award degrees in their own name, the number of students enrolled for degree programmes, and the number of staff with doctoral degrees. In spite of this, many technikons not only consider themselves to be technological universities, but are already functioning at university level. The PE Technikon is one such institution.

Academic staff were employed originally on the basis of their experience in industry rather than their academic qualifications and their function was to teach. Today not only are lecturers being urged to upgrade their qualifications but they are expected to be active in all aspects of teaching, research and development, institutional and community service, and

scholarship.

In this respect, their functions correspond with academic staff at universities. In addition, however, technikon lecturers are expected to maintain regular contact with industry in order to remain current, competent, and abreast of developments.

The next chapter, Chapter 4, will explore the dimensions of academic work in higher education.

4.1 INTRODUCTION

The previous chapter described the technikon environment and how its history and nature have shaped the academic milieu in which academic staff work. This chapter will now focus on academic work itself from a number of perspectives. It will identify the components of workload, the changes that are taking place within the higher education arena and the resultant effects on practice. Finally a review of the findings of empirical workload studies will be outlined.

Minimal literature specifically relating to academic work in South Africa could be found. What follows is a review of literature originating in other countries, especially the UK, Australia and the USA, much of which is relevant to this country. Many parallels can be drawn between the technikons in South Africa and the former polytechnics in the UK and the Colleges of Advanced Education (CAEs) in Australia. Therefore the literature findings relating to academic staff and job functions in these sectors of UK and Australian HE are of potential significance to this study.

A number of important similarities between these overseas institutions and the technikons will now be highlighted. Firstly, these institutions occupied a similar position within the HE system and their mission was also focused on the provision of vocational and professional courses. Secondly, academic staff were originally employed primarily to teach. Thirdly, both were transformed into degree awarding institutions, although via a different route to the technikons. Higher education in both these countries underwent restructuring after 1992 and 1988 respectively, changing from a binary system which separated universities and vocational institutions, to a unitary system consisting of universities only. The restructuring in each country was carried out differently. In Australia there was consolidation of HE institutions largely through the amalgamation of the CAEs with the universities. In the UK amalgamation

was generally not utilised. Instead, most of the polytechnics were redesignated as universities (Keep, Storey & Sisson, 1996; Mahoney, 1996; Moses, 1990; Wilson, 1995).

The next section of this chapter will describe the traditional functions of academic staff, followed by a review of the relationship or balance between them, with particular emphasis on teaching and research.

4.2 COMPONENTS OF ACADEMIC WORK

4.2.1 Background

Academic work is diverse and includes a wide variety of activities. There is general agreement that there are three main duties or core functions that academic staff are employed to perform: teaching, research, and service. Depending on the viewpoint and interpretation, scholarship may also be included as a function (Elton, 1992; Gordon, 1997; Jordan, 1994; Kogan, Moses & El-Khawas, 1994; Soliman & Soliman, 1997). Gordon (1997) advocates the addition of management and administration as a further function. Within each of these core functions a lecturer may be involved in a very broad spectrum of activities and, depending on the activity, may assume a diversity of roles appropriate to the situation, inter alia : teacher, scholar, manager, entrepreneur, and practitioner (Gordon, 1997).

4.2.2 Teaching

Teaching appears to be the main function of most academic staff. Increasingly the word "teaching" is being replaced by "facilitation of learning", which better reflects the role and function of the lecturer with respect to the student (Taylor, 1994). The role of the lecturer is multifaceted and depending on the situation may be that of supervisor, collaborator, mentor, demonstrator, leader or developer. According to Hall (1996), the following nine key teaching roles can be identified: subject expert, course designer and manager, communicator, motivator of learning, academic advisor, research supervisor, assessor, evaluator, and self-

manager.

Such diverse roles serve to illustrate the complex nature of teaching and dispel the popular myth that teaching merely involves lecturing to a class of students.

Indeed, the very complexity of the teaching function highlights a debatable issue: should academic staff in higher education be required to obtain a professional teaching qualification? In the past, it was assumed that because a lecturer was an authority in a chosen field he or she was capable of teaching. All that a lecturer required was expert knowledge and students would automatically learn and be successful. This is illustrated by Utley (1998) who reported in the Times Higher Education Supplement (THES) that "Traditional universities...believe that mastery of a subject enables an academic to teach". In the UK, the report of the National Committee of Inquiry into Higher Education, under the chairmanship of Sir Ron Dearing, stated that

> *To achieve world class higher education teaching, it should become the norm for all permanent staff with teaching responsibilities to be trained on accredited programmes.*(Dearing, 1997, p.15)

The report also recommended the establishment of an Institute for Learning and Teaching in Higher Education, one purpose of which would be to establish higher education teaching as a profession in its own right.

4.2.3 Research

The word "research" can be interpreted in a number of ways. A very narrow and exclusive perspective, prevalent in the traditional university, sees it as the creation of new knowledge only. This is pure, basic or fundamental research. A broader interpretation includes applied research, contract research, creative work and even consultancy and professional practice (Brook, 1999). Blackburn and Lawrence (1995), in their study, distinguished research as an

activity that results in a product, for example an article or an artefact. The type or nature of the research carried out at an higher education institution is a reflection of its specific mission (cf. par 3.5 for a discussion of the mission of technikons). According to Dane (1990) most types of research will involve some, but not necessarily all, of the following: choosing a topic to investigate, a literature study, searching of databases, designing and planning the project, submitting a proposal, obtaining funding, conducting the research, writing a report and possibly a journal article.

As with teaching, research is also a complex activity requiring many different skills. Bazely (1994) summarised the main factors which influence involvement in research and research output:

1. The quality of interaction with colleagues, including role models or mentors who play an important part in the development of the researcher's work
2. Personal motivation, which is often emphasised by researchers themselves
3. Culture and social structures which create an environment conducive to research activity
4. Basic resources such as time, library facilities, laboratory space and assistants.

According to Bazely (1994, p.122) " ...a strongly motivated researcher will achieve despite high teaching loads and limited resources, but much potential will be lost". He goes on further to add that the "newer" universities in Australia fell short of their "older" counterparts on almost all the factors identified as being conducive to productive research. Academics in the newer universities spent more time on teaching and less on research than those in the established universities, which was a reflection of their former teaching focus and the higher teaching loads still demanded of them. Lecturers in the newer institutions were found to be less successful than others in publishing and in competing for grants. In addition, staff

reported little confidence due to lack of research skills.

In conclusion, these issues are of relevance to this study, since technikon lecturers also have high teaching loads and may lack the necessary research skills.

Scholarship and its relationship to research will be outlined in the next section of this chapter.

4.2.4 Scholarship

Scholarship is not so much a function as an activity that is expected of all academics working in HE (Moses, 1990). Scholarship, like research, means different things to different people and it is, therefore, hard to arrive at a satisfactory and consensual definition. The Concise Oxford Dictionary defines a scholar as "a person who learns, or a learned person" and scholarship as "quality of having attained learning, or methods and achievements characteristic of scholars". These definitions give no hint regarding its meaning when applied to a component of academic work, other than indicating that it is clearly an intellectual activity aimed at learning or knowing within a discipline.

The term has had a long history and much of the problem lies in the change in meaning over time. Originating in Germany from the ideas of Von Humboldt, the concept of scholarship was concerned with a deep understanding of knowledge which was on the one hand related to the development of new knowledge, and on the other to the presentation of this knowledge in the education of students. It therefore supported both research and teaching. In time this idea changed, and it came to be associated with research only. To be a scholar was to be a researcher, and scholarly productivity was measured by publication. In fact the terms scholarship and research were often used synonymously. This dominant interpretation was particularly prevalent in the traditional universities of the USA and the UK (Boyer, 1990; Elton, 1992; Moxley, 1996; Rice, 1992).

At the beginning of the 1990s this traditional view was criticised for being too narrow - even

myopic - and no longer appropriate for the changing working life of academic staff (Rice, 1992). Many called for a broader view of scholarship to make it more inclusive and appropriate to the greater diversity of modern academic life (Boyer, 1990; Moxley, 1996; Rice, 1992). Boyer (1990) was, perhaps, the most significant advocate of this reform in that he was one of the first to recognise the need to treat all academic activities as scholarship. He saw an academic as having four separate but overlapping functions described below.

1. The scholarship of discovery

   This is the traditional research function, which contributes to the knowledge base and the intellectual climate of the institution. It must be cultivated and nurtured as it enlivens lecturers, and creates excitement and invigoration in the institution.

2. The scholarship of integration

   Being a scholar also involves stepping back from investigation, and interpreting the meaning of knowledge as it fits into the broader picture. This requires a divergent approach to knowing; one that reaches across disciplinary boundaries and pulls disparate views and information together in new and creative ways.

3. The scholarship of application

   A scholar must also question how knowledge and learning can be used in real life; how it can be of service to individuals, institutions, and the greater community. This is the service component, but should not be confused with activities characterised as good citizenship. Scholarship of service refers to service activities directly tied to a lecturer's special field of knowledge.

4. The scholarship of teaching

   Teaching starts with what the teacher knows, therefore lecturers must be scholars themselves. Teaching is not only transmitting, but transforming and extending

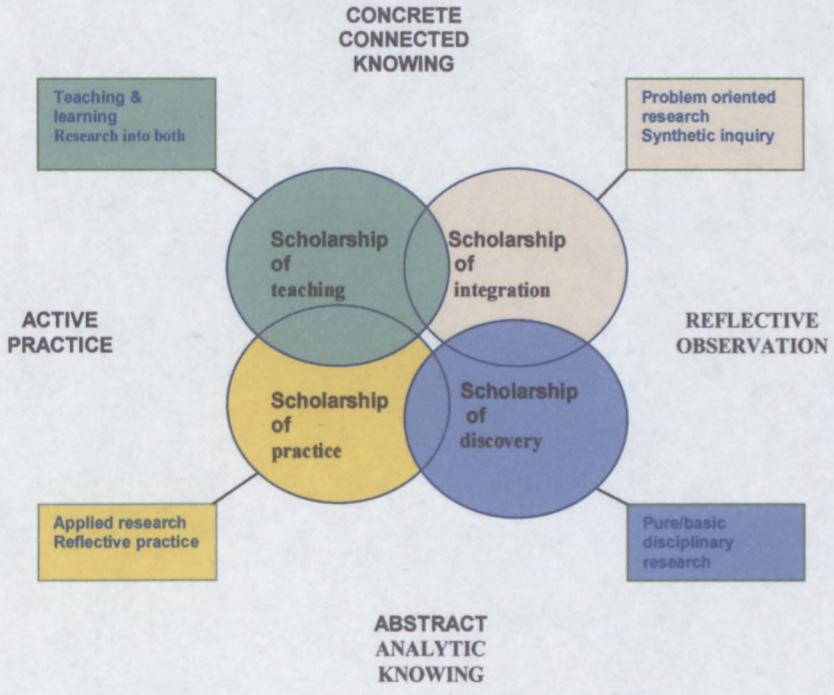
knowledge, and being creative about it.

Rice (1992) broadened these four forms of scholarship by integrating them with Kolb's experiential learning cycle. He divided the ways of knowing, using the same two polarities as Kolb: the concrete/abstract axis which refers to the way knowledge is perceived and the reflective/active axis which indicates how that knowledge is processed. The two intersecting axes produce four quadrants; into each Rice places one of the four forms of scholarship. The different forms of scholarship are interrelated and often overlap each other. They should interact, inform and enrich one another. Lecturers should, ideally, be involved in all forms of scholarship. Elton (1992) went a step further by allocating certain academic practices to their most appropriate forms of scholarship. The ideas of both Rice (1992) and Elton (1992) as they relate to Kolb's cycle are illustrated in Figure 4.1 on the following page.

For Boyer (1990) and Rice (1992) therefore, scholarship is a broader concept than research and embraces every activity with which a lecturer may be involved.

The viewpoint of Ball (1992) is the opposite; scholarship is in fact a form of research, in the same way as fundamental and contract research. The New Zealand Qualifications Authority, as cited by Brook (1999), also supports this viewpoint. Further definitions of scholarship add to the conundrum. Elton (1992) and Moses (1990) emphasise that scholarship has to do with interpretations of what is already known, that is existing knowledge. Blackburn & Lawrence (1995) see it as professional growth. Elton (1992) asks whether there are disciplines in which research consists of interpretation, in which case research and scholarship are one and the same thing.

Figure 4.1 The interaction between scholarship, related academic practices, and Kolb's experiential learning cycle (based on Rice, 1992, p.122)



Yet another approach to scholarship is shown in the definition by Adey and Steyn (1988, p.6), "...staff member's standing and stature in terms of his/her discipline, formal qualification, rate and quality of publications, originality, creativity, and ability to provide guidance to graduate students". This differs from the other definitions because it takes a more concrete and pragmatic stance to the concept.

Synthesising from these diverse definitions is difficult, but perhaps it can be described as a collective concept which includes a wide range of intellectual activities that lecturers pursue in order to become learned in their profession. It could also be viewed as an umbrella under which the various functions of an academic are united, and at the heart of each is the very ethos of scholarship, which is the advancement of knowledge and learning. Ball (1992) makes it very clear that scholarship is the duty of all who teach in higher education. Its purpose is to enhance the quality of teaching, something he points out, that research does not

necessarily do.

The following are considered to be evidence of scholarly activities (Gibson, 1992; Blackburn & Lawrence, 1995; Soliman & Soliman, 1997):

- Research and publication
- Activity in professional societies, professional recognition by peers
- Public service
- Consultation
- Writings such as books, essays, study guides, manuals, articles, reports
- Presentations at conferences, and editing conference proceedings
- Creations such as works of art, compositions, computer software
- Editing and refereeing journals, manuscripts, research funding proposals
- Library work and reading
- Computer use.

In conclusion, the diversity of often contradictory definitions points to a certain blurring of the boundaries between scholarship and research, making it difficult to define scholarship with accuracy.

4.2.5 Service

Blackburn and Lawrence (1995, p.222) define service as "... a catchall name for everything that is neither teaching, research, nor scholarship". It includes a very wide variety of activities that often involve good citizenship in one form or another. The activities may be directed internally at the institution itself, or externally towards the community or professions. Irrespective of the type, service activities are undertaken for the good of the institution (Gibson, 1992; Gordon, 1997). Service is one of the ways that higher education institutions fulfil their mission to the local community by sharing the expertise of their

lecturers. In this way rapport is established between the institution and the community (Gordon, 1997). According to Blackburn and Lawrence (1995) and Gordon (1997) the following are considered to be examples of service :

- Activities within the institution: committee work, arranging visiting lectures, liaising with student organisations, general administration, and organising short courses for other staff
- Entrepreneurial activities which are undertaken with the purpose of generating income for the institution, faculty or department: organising short courses, registering patents, and establishing commercial units
- Activities for the profession or discipline: serving as office bearers, organising seminars and conferences, and sitting on an editorial board for a periodical
- Consultancy - this involves outside persons using a lecturer's specialised knowledge and expertise. It may be done *pro bono* or it may involve payment to either the institution or the individual lecturer. The latter practice is often referred to as "moonlighting". Many institutions prohibit this form of consultancy whilst others set limits. Opinions about paid consultancy vary. Blackburn and Lawrence (1995) report that arts and science lecturers tend to regard it as moonlighting, and a means of fattening personal income which detracts from the status of the faculty. Those in professional disciplines, however, regard it with value and argue that this type of activity is professional development, keeps lecturers in touch with real world problems, and enhances the reputation of the institution.

4.2.6 Conclusion

In conclusion, academic work entails four activities. Teaching, research, and service are

considered to the core functions for which academic staff are employed. Scholarship on the other hand, unifies the three functions and is an activity that is presumed of all academics in higher education. Scholarship, therefore is not so much a function as an ethical responsibility, with the potential to bring about professional empowerment.

It can be seen that a lecturer has a complex workload. Although the four elements of teaching, research, service and scholarship can be distinguished, they are not mutually exclusive and there are many overlaps due to different interpretations, particularly of research and scholarship. It can, therefore, be difficult to draw a fine line between them and perhaps it is better not to be too pedantic about precise definitions.

The balance between teaching, research, service and scholarship and the relative emphasis placed upon each is a very important and sometimes controversial issue. This will be addressed in the next section.

4.3 THE BALANCE BETWEEN WORKLOAD COMPONENTS

4.3.1 Introduction and background

The diversity of academic work brings questions regarding the relative emphasis accorded to each function. The literature from other countries highlighted four major problem areas relating to workload functions:

- An overemphasis on research activities
- The greater status and reward accorded to research and the undervaluation of teaching
- A tendency of newer institutions to imitate the older institutions
- The apparent lack of interest in the scholarship and service components

Each of these will now be elaborated upon.

4.3.2 The over emphasis on the research function

The traditional university model of higher education is built on the principle that teaching and research are inseparable and that teaching is provided by those who are active in research. Whilst this was possible in elite systems of higher education, there are many who question whether this principle is appropriate in the present (Ball, 1992). The problem in many countries today is an overemphasis on the research function. Although this is most often associated with the traditional universities, it is now spilling over into the new universities of the UK and Australia (Mahoney, 1996).

Whilst research and teaching are recognised functions of universities (and technikons), there have been calls in a number of countries, South Africa included, for a hierarchy of higher education institutions and a task differentiation with respect to research. This would result, therefore, in a separation of teaching and research functions (Ball, 1992; Elton, 1992; Garnet & Holmes, 1995; CHE, 2000).

The question of the relationship between research and teaching has been the subject of extensive empirical studies and much heated debate. There is a widespread belief amongst teachers in higher education that research involvement and teaching are mutually beneficial. A competent researcher will be a competent teacher and active research involvement is a *sine qua non* for inspired teaching (Berman Brown & McCartney, 1998; Brew & Boud, 1990; Moses, 1990). Empirical studies have, however, failed to show conclusively that there is a connection between research productivity and effective teaching. Results of such studies are not conflicting, but inconclusive (Brew & Boud, 1990; Ramsden & Moses, 1992; Schuetze, 1995). Despite this, there are many who advocate that there are undisputed benefits of research involvement. Westergaard (1991) argues from an ideological standpoint that higher education proceeds from the principle of investigative and exploratory inquiry, that

communicating knowledge and skills are important, but that it is equally important to develop the attitudes of critical enquiry in students and staff alike.

The following are some of the more pragmatic benefits of research (Garnet & Holmes, 1995; Rowland, 1996; Wilson, 1995) viz : it contributes to the overall academic health of the institution, it places the academic in the role of the learner, it keeps the lecturer up to date in his or her field, and it creates confidence and self-esteem in the lecturer. In addition, researchers demonstrate the habit of reflective practice which is lacking in teaching. By becoming active in research, lecturers might start to reflect upon their teaching activities as well.

Another viewpoint of the research versus teaching problem is that of Miller (1995) who is of the opinion that institutions must re-examine their emphasis on research. He states that there is too much research being undertaken which is proving unsustainable. Funding for research is slowing, lecturers are finding their research demands increasingly onerous, and they feel that it interferes with teaching responsibilities. In addition, much of the research that is produced is either trivial or overspecialised.

According to Moses (1990) the most serious outcome occurs when research absorbs time and resources and teaching then becomes a secondary occupation, perhaps even a distraction. Most of these arguments tend to revolve around research related to the lecturer's own discipline. There have, however, been calls for increased research into teaching and learning in higher education (Dearing, 1996). Smith & Brown (1995) called for institutions to recognise teaching and learning as their core business and to devise strategies to ensure that research into its effectiveness is undertaken. Race (1995) argued that the most effective teachers are researchers, but not in the conventional sense. In his opinion, effective teachers are usually researchers into teaching and learning. Unfortunately when such researchers do

publish, their work is often devalued and not regarded as "proper" research. Race's (1995, p.75) acrimonious attitude is evidenced by his use of the metaphor "running brook or stagnant pool" to compare those active in research with those who concentrate on teaching:

> *...the real running brook should be associated with those who actively develop the quality of their students' learning rather than those pushing forwards the frontiers ever so slightly in some tiny area of subject specialism.*

In conclusion, much has been written about the teaching versus research functions of academic staff. There is no conclusive empirical evidence to suggest that there is a relationship between research productivity and effective teaching. Yet, this is a firmly held and widespread belief amongst academics. It is of great concern that in many countries research is being overemphasised to the detriment of teaching , even in the new universities. In a recent edition of the THES (Research 'time bomb', 2000), Dr Roger Brown was quoted as follows:

"People have started to realise that research can damage teaching quality and that this problem has to be tackled."

There have been many calls for higher education institutions to re-evaluate their mission towards research, and in particular to the volume of discipline related research that is being produced. At the same time, however, there is a need for universities to increase research and scholarship into teaching and learning in higher education.

The next paragraph will discuss one of the outcomes of the overemphasis on research: the greater prestige and status of research as a work function.

4.3.3 The greater status of research

The research versus teaching polemic is unfortunately fuelled by the widespread perception prevalent amongst a great section of academic staff that research is more prestigious and

carries more status than teaching. In fact, this is more a reality than a perception since research carries greater rewards in terms of promotion, merit awards, tenure, and salary (Brew & Boud, 1990; Elton, 1996; Kogan, Moses & El-Khawas, 1994; Miller, 1995; Moxley, 1996; Rowland, 1996; Soliman & Soliman, 1997) - from whence the famous adage "publish or perish". The danger in the new universities is that staff, already pressured to be active in research, will get the message that research is more important than teaching and that it is the key to career progression and promotion (Berman Brown & McCartney, 1998; Mahoney, 1996). That the status of research has diminished the importance of teaching is particularly disturbing in these institutions, whose primary mission was teaching. Traditionally, staff in these institutions not only took their teaching more seriously, but considered it superior to that found in the "old" universities (Berman Brown & McCartney, 1998). Mahoney (1996) points out that since the end of the binary divide, staff in the new universities of Australia and the UK reported that not only did they experience difficulties in balancing their teaching and research responsibilities, that but it had led to a neglect of teaching.

Jenkins (2000) suggests that much can be learned from the USA where, thanks to the reforms of Boyer, " The value of teaching has been re-established to its rightful place and is seen as a scholarly, intellectual and public activity capable of creating intellectual excitement amongst staff".

In the UK, in response to the greater value being attached to research, the Dearing Report (Dearing,1997, p.7) called for "a radical change in attitude to teaching". The establishment of the Institute for Learning and Teaching in Higher Education is aimed at bringing about the necessary changes. The Institute's functions would include accrediting professional achievement in the management of learning and teaching, commissioning research into teaching and learning practices, stimulating innovation, and co-ordinating the development of

innovative learning materials (Dearing, 1997).

In conclusion to this section, the overemphasis on research has not only lead to the deterioration in the quality of teaching in higher education, but also to greater prestige and rewards for those that are involved in research. This has to be redressed in the future.

The next paragraph will discuss the phenomenon of "mission drift" and its negative consequences for higher education institutions.

4.3.4 The mission drift of the newer institutions

Yet another consideration in this debate is what is referred to as "mission drift" or "upward drift". Boyer (1990) described this phenomenon whereby newer institutions play follow-my-leader and imitate the path taken by older institutions. He said that despite mission statements to the contrary, these institutions increasingly seek status by emulating research institutions. Some change their name whilst others change the rules by which lecturers are employed or rewarded. As institutions are driven by external imperatives of prestige rather than self -defined objectives, their missions become blurred, standards of research are compromised, and the quality of teaching and learning disturbingly diminished.

An example of mission drift was reported by Mahoney (1996) who surveyed Australian and British academics in the new universities. He reported that in both countries, respondents were of the view that the professional and vocational orientation of their institutions was being eroded by the movement towards the more academic orientation of the traditional universities.

The fourth problem relating to relating to workload functions was the lack of interest and recognition given by management to scholarship and service. This will be outlined in the next section of this chapter.

4.3.5 The apparent lack of recognition given to scholarship and service activities

It would appear that scholarship and service are the Cinderellas of workload. According to Davies (1998) when compared to research, scholarship activities often fail to be recognised by administrators who regard the time spent on them as being wasted. Staff who are active in scholarship, but not in research, are being disadvantaged both contractually and financially. Service is expected of all lecturers to a greater or lesser extent, and many would argue that their administrative workload has become excessive. Service to a profession is regarded by many as the most honourable and prestigious of activities, bringing professional recognition to the lecturer and an enhanced reputation for the institution (Blackburn & Lawrence, 1995). These authors also note that whilst administrators applaud those lecturers who are involved in external service, they seldom reward them for their efforts.

4.3.6 Conclusion

In the view of the problems that have been highlighted, it is not surprising to find that there have been repeated criticisms levelled against universities, and in particular the new universities. Schuetze (1995) revealed that in Canada there were serious concerns that teaching was taking second place to research, to the obvious detriment of teaching. A similar situation was reported in the UK (Research 'time bomb', 2000). There have been calls from many quarters for a reaffirmation of teaching as the primary task of higher education. Of particular importance is the need for institutions to recognise and reward those lecturers who regard teaching as their primary task (Miller, 1995; Smith & Brown, 1995).

It is apparent that a balance must be struck between teaching, research, scholarship, and service activities. In addition, most of these activities necessitate considerable administrative input on the part of the lecturer. Whilst not every academic is engaged in all of these activities, there are many who are expected to do so (Kogan, Moses & El-Khawas,1994;

Werner, 1996; Keep, Storey & Sisson, 1996; Fisher, 1994). Moses (1990) adds that it is essential that institutions define the expectations they have of academic staff with regards to their functions.

The problem seems to be that tensions exist between the various activities, particularly in the light of the greater prestige for research. Jordan (1996) believes that it is essential for institutions to clarify the ways in which resources - particularly staff time- are allocated. They should ensure that lecturers' work activities are directed in a balanced way that not only reflect the mission of the institution, but also meet the needs of the student and community. Institutional aspirations should take second place to both.

4.4 CHANGES IN HIGHER EDUCATION THAT INFLUENCE ACADEMIC WORKLOAD

Those working in higher education are only too aware of the myriad of changes that have taken place within the past few years. The consequences of these changes are important to this study since they affect the work activities of academic staff. Most of the changes that have occurred recently in South Africa are not unique; on the contrary they were experienced first in the USA, Europe and Australia during the last decade. A brief discussion of the most significant changes will follow.

4.4.1 The quantitative expansion of higher education

UNESCO (1995) identified quantitative expansion as one of the three major trends that characterise higher education world wide. The countries most associated with this are the USA, Canada, UK, France, Germany, Japan, Australia and New Zealand. In these countries, higher education has moved from an elite to a mass system (Mahoney, 1996; McInnis, 1995; Radford, 1997; Schuetze, 1995; Scott, 1998). Although there are qualitative differences between the two, the quantitative difference will suffice for this report. Elite systems of

higher education are characterised by participation rates of less than 15%, whilst mass systems demonstrate rates of between 15% - 50%. The UK has a participation rate of nearly 30% (Dearing, 1997). A participation rate greater than 50% (as in the USA), is termed universal higher education (Trow, 1992).

In South Africa, the expansion is part of the transformation of HE. It is both a response to the urgent need to redress past imbalances of equity, access and opportunity imposed by apartheid policies, and the demand for a highly trained manpower necessary for the economic growth of the country. The report of the National Commission on Higher Education (Reddy, 1997) predicted mass higher education and participation rates of 20 % - 30% of the 20 - 24 age cohort over the next decade and a doubling of student numbers from 800,000 to 1,5 million by 2005. Although numbers have increased, this expansion has failed to materialise and there is now a serious decline in the rate of enrolment. The CHE(Council on Higher Education, 2000) has now modified the target participation rate to 20% of the 20 - 24 age cohort over the next 10-15 years.

The PE Technikon has experienced a significant expansion, although this is now slowing (cf par. 3.9.1, Figure 3.3).

4.4.2. Increased student diversity

A consequence of the quantitative expansion is a dramatic change in the student profile. It has resulted in a much more heterogeneous body than before with a broader range of diversity factors such as: gender, race and ethnicity, socioeconomic status, age, religious beliefs, intellectual ability, preparedness for higher education, language, and employment status. The PE Technikon has also experienced such changes (cf. par. 3.9.1).

4.4.3 Declining resources

Reports of "making do with less" are common, as many countries suffer from reduced central government funding and decreased staff student ratios which have to be balanced by increased funding by students. It is commonplace for the South African media to report on the dire financial straits in which higher education institutions find themselves due to increased costs, reduced central funding, and soaring student debt.

4.4.4 The move towards a learning paradigm and outcomes based education

Worldwide in higher education, there has been a move away from the traditional focus of teaching as the primary aim, to one of learning. The former is teacher- centred and the latter student-centred. Barr and Tagg (1995) identified the characteristics of the learning paradigm to be, inter alia :flexible learning environments, success for everyone, an emphasis on the results of learning and outcomes assessment, student-centred and student controlled learning, and students' active involvement in learning, often in collaboration with others.

Outcomes based education focuses on what a person can do at the end of a learning activity or programme and is strongly learner-centred. The Dearing Report (1997) emphasised the need for clear statements about the intended outcomes of HE programmes and recommended a framework of qualifications which provides for progression, credit accumulation and scope for the transfer of credits from one institution to another.

Similar changes have been seen in South Africa, driven by SAQA and the NQF. Most teaching staff at technikons have already been involved in the statutory recurriculation requirements of SAQA.

4.4.5 The emphasis on lifelong learning and personal transferable skills

The rapidly changing work environment and the short shelf-life of much professional knowledge has focused on the need for all employees to be involved with continued learning

throughout their working life. Deemed to be of such national significance, the Dearing Report (Dearing, 1997, p.1) in the UK, titled its report "Higher Education in the Learning Society". There is growing recognition that specialised knowledge and understanding of a subject is no longer regarded as a sufficient qualification for graduates entering a rapidly changing workplace. Employers want employees with generic or transferable skills such as creativity, problem solving, independence, initiative, adaptability, team work, the ability to use information technology, and learning how to learn. These skills have to be developed during higher education (Dearing, 1997; Kogan, Moses & El-Khawas, 1994; McInnis, 1995; Stefani & Nicol, 1997; Wagner, 1995).

In South Africa, the Education White Paper 3 (Department of Education, 1997) also states that one of the challenges for HE is to lay the foundation for the development of a learning society. Personal transferable skills are also accommodated as the critical outcomes required of all SAQA accredited courses.

4.4.6 Information technology

Few people working in higher education can say that they have escaped the influence of information technology upon their everyday working life. Increasingly, computers and software applications are becoming an indispensable component of academic life. E-mail has transformed traditional means of communication, the Internet has become an essential medium for lecturers and students to obtain up to date information, and many periodicals are published on-line. Multimedia has created new opportunities to enhance the learning experience for students. It would also be hard to identify any workload activity that is not dependent upon a degree of computer literacy.

In conclusion, the changes that have been identified are by no means conjectural, they have a direct effect on those working at the rock-face - the lecturers and their students. The

following section reviews the actual effects of change on the day to day life of lecturers working in HE.

4.5 THE EFFECTS OF CHANGE ON THE ACADEMIC WORKLOAD OF STAFF

The changes in the HE that have been described have had significant effects on lecturers and their workloads, the most important of which will now be highlighted.

4.5.1 Increased workload

Globally, there is a trend to put increased pressure on academic staff to be more productive and effective. Increased workloads and considerable pressure to do more teaching, research and community service are the order of the day, simultaneously administrators are calling for improved quality of such work (Currie & Woock, 1995; Farnham, 1985; Soliman & Soliman, 1997). Thus there are both quantitative and qualitative changes being experienced by academic staff in higher education. In particular, teaching and administrative workloads have increased to the extent that there is little time left for other activities. Associated with this increased workload are stress related illnesses, fatigue, reduced job satisfaction and motivation, and lower productivity (Mahoney, 1996; Soliman & Soliman, 1997).

4.5.2 Pressure to improve qualifications and pursue research

In the UK and Australia the change to a unitary system of higher education impacted heavily upon staff in the former polytechnics and colleges, resulting in an emphasis on academic qualifications and publications as the key to progression and promotion. There is, therefore, considerable pressure on academics to obtain PhDs and become involved in research, despite being recruited primarily as teachers. This is accompanied by pressure to publish. Competent teachers are made to feel unproductive and undervalued if they do not have a string of publications to their name. Increased workloads do not allow for sufficient time for

meaningful research and compensatory time is rarely given to staff. This too contributes to increasing stress levels in lecturers (Mahoney, 1996; Smith & Brown, 1995; Wilson, 1995).

4.5.3 Pressure to change traditional teaching methods

Increased student numbers and diversity, the drive for lifelong learning, the call for the quality of student learning to improve and the shift towards a learner-centred outcomes paradigm have all contributed to a greatly changed teaching task. Lecturers are being pressured to adopt new, innovative, student-centred approaches to teaching and learning, and to understand how students learn (Jackson, 1997; Mahoney, 1996; Stefani & Nicol, 1997). To many lecturers, the move to a student centred approach is radical and threatening, and as a result they may resist it (Smith & Brown, 1995). Increased student staff ratios have resulted in less time available for small group work and one-to-one contact with students (Mahoney, 1996).

In addition, many lecturers are involved in using alternative methods of delivery , for example distance learning and the use of technologies such as the Internet and local intranets.

4.5.4 Pressure to be involved in entrepreneurial activities

As public funding decreases so there is a need to seek alternative means of generating revenue. One such way is by engaging in entrepreneurial activities(Miller, 1995; Currie & Woock, 1995). Slaughter and Leslie (1995) reported that in Australia, not only was entrepreneurism encouraged but it was even demanded of lecturers as a means of raising money to fund their units and departments. A survey undertaken at Technikon Pretoria in 1994 indicated that between 55% and 60% of all academic staff were involved in presenting short courses in some way (Van Rensburg, 1995).

4.5.5. Pressure to become computer literate

The pervading influence of information technology requires lecturers to expend time and

effort to become computer literate. Much of this learning takes place "on the job". The PE Technikon recently changed all its software applications from Corel to Microsoft. This has required considerable re-training of staff in the institution. In addition, it is envisaged that within 5 years all teaching material (study guides, tests and examinations, lecture outlines etc) will be available to students on the institutional intranet (R.Gerber, personal communication, 15 June 2000).

In conclusion, this chapter has outlined the following : the components of workload and their relative balance, the changes that have occurred in the HE, and their effects on the lecturer's academic workload. To complete this chapter, a review of the findings of empirical workload studies will follow.

4.6 EMPIRICAL WORKLOAD STUDIES

4.6.1 Background to workload studies

Faculty workload studies try to establish how lecturers expend their time in terms of how much time they spend on work and how they allocate that time. These studies have been particularly prolific in the USA where they originated in response to the widely held belief that lecturers were spending too little time in the classroom and too much time doing research (Jordan, 1994).

According to Jordan (1994) and Lloyd (1994) studies are usually carried out by institutions themselves, but may also be undertaken by national or state bodies. The purpose of these studies is twofold:

- To enable an institution to understand its staff resources and to manipulate how they are deployed, thereby improving productivity. Thus far, workload studies have not shown much success in achieving this objective
- To enable an institution to assess how well it is achieving its mission by defining and

measuring what its lecturers are doing.

The most common method of obtaining the information is activity reporting. Lecturers report the amount of time they spend on each activity over a specified work period - usually one week. All studies use the categories of teaching, research, scholarship and service. There are three particular criticisms levelled at these studies:

- They are self-reported, with no documentation to corroborate replies and are therefore subjective. This may lead to overestimations in terms of time spent
- They only report on how lecturers allocate their time, not what is actually produced.
- They only report the quantity of time spent on an activity, not its quality.

(Blackburn & Lawrence, 1995; Jordan, 1994; Lloyd, 1994; Yuker, 1984).

In the following paragraph, the main research findings of workload studies will be reviewed.

4.6.2 Research findings

The following is a summary of the more important findings which have relevance to this study . It should be remembered that these findings apply to higher education institutions in the USA. References will be cited only at the end of this paragraph.

- Some reports indicated that lecturers spend between 50 - 60 hours per week working, whilst others cite 44 - 55 hours. The figure most often quoted was 55 hours per week. These figures are open to conjecture; some claim that 55 hours per week is representative because repeated studies have all identified this figure, others say that as it is self-reported it is probably inflated. Reports using other techniques indicated that 45 hours per week is more likely.
- It was reported that 50 -55% of that time was spent on teaching and related activities. The amount of time spent on teaching varied with the type of institution, being highest in community colleges and comprehensive institutions and lowest in research

universities. Approximately 25% of time was spent on research and the balance on service, which included administration. The higher the rank or post level, the more time spent on service and administrative functions.

- The distribution of academic work in terms of teaching, research and service was affected by the vision and mission of the institution. In predominantly research universities, lecturers, not surprisingly, spent more time on research and less on teaching. The inverse was the case at comprehensive institutions. For example, at liberal arts colleges 35% of staff spent no time on research compared with only 10% at top research universities.
- There were disciplinary differences in terms of research productivity. Sciences and the social sciences had the highest and fine arts the least. Business, education and the humanities were somewhere in the middle.
- Most lecturers produced no scholarly works (publications) at all. There were conflicting reports regarding rank(post level) and research productivity, but the more recent ones indicated that those who were higher ranked were more productive ; others denied any relationship. Males published more than females.
- The age of the individual and career stage appeared to be related to the way lecturers allocated their time. With increasing age, interests shifted from research to teaching.
- Service seemed to increase over the years as lecturers became comfortable with their teaching responsibilities and were less pressured by the demands of scholarship(interpreted in this context as research).
- There was conflicting data regarding the amount of time devoted to professional development or keeping up to date in the discipline. Yuker (1984) made the point that lecturers are expected to spend an appreciable (though unspecified) amount of time

keeping up to date, but no-one seems to be interested in establishing how long it actually takes.

- Lecturers valued research more than teaching and when asked how they would like to allocate their time they indicated that they would like to reduce the amount of time on teaching and spend more on research. Despite this, staff believed teaching to be very important.

(Austin & Gamson, 1983; Blackburn & Lawrence, 1995; Glazer & Henry, 1994; Jordan, 1994; Lloyd, 1994; Yuker, 1984).

Yuker made a very important point when he stated that providing time seldom results in increased research productivity. A reduction in teaching load will probably not result in increased scholarship, although an increased teaching load would probably result in decreased scholarship. Institutions should look for evidence of research productivity rather than assume that a reduction in teaching load will automatically result in more research being done. Time for research appeared to be directly related to the priority attached to research, compared with the priority given to the other components of workload. People who want to do research will find the time, be it during vacations, sabbaticals, or weekends. He was also of the opinion that a motivated lecturer with a high interest in research was the best indicator of research productivity.

This was substantiated by Blackburn & Lawrence (1995). These authors undertook a behavioural survey aimed at developing and testing a motivational framework grounded in contemporary psychology and sociology, to account for why lecturers do what they do at work. Their theoretical perspective was that characteristics of individuals and their employing environment combine and lead to variations in lecturer motivation, behaviour and productivity.

They found that the work environment, physical and financial resources impact upon lecturer performance at work, and that lecturers do what they believe they are good at and devote their energy to what most interests them. They found that the strongest predictors of lecturer productivity included self-judged competence, preferred effort to give to a role and the perceived institutional expectation of effort given to the role. It is the interaction between this self-knowledge and social knowledge that determines lecturer behaviour.

The research findings of these workload studies will provide a useful comparison for the outcomes of this study.

4.7 CONCLUSION

This chapter has reviewed in detail the work activities of academic staff in higher education. It has shown that the scope of academic work is rich and varied and balancing the demands of teaching, research, scholarship and service is far from easy. One of the problems would appear to be the value hierarchy that exists and which recognises and rewards research over the other activities. Measures have been taken in some countries to overcome this problem. Academic work is also constantly evolving in response to changes in the HE environment. This study focused on the academic work of technikon lecturers who are expected to fulfil all the traditional activities of teaching, service and scholarship. They are now required to be active researchers, and are expected to have regular contact time with industry in order to keep abreast of the latest commercial and technological developments.

The following chapter, Chapter 5, will discuss the results of the empirical survey that was undertaken to investigate the academic workload of lecturing staff at the PE Technikon.

5.1 INTRODUCTION

This chapter will present, describe and discuss the results of the data analysis. The methods used to analyse the data were described in detail in Chapter 2 (cf. para 2.2.2.5). In summary; the questionnaire responses were computerised using Microsoft Excel ®, the data was saved electronically and then analysed using descriptive statistics. The results were displayed as frequency counts. Cross tabulations were also performed. The full results are to be found in Appendix G. All numbers quoted in the text and the appendix have been rounded to whole numbers.

The first two sections of this chapter will report the response rate and the biographical data relating to the respondents.

5.2 RESPONSE RATE AND BIOGRAPHICAL INFORMATION ABOUT THE RESPONDENTS

The questionnaire was distributed to 175 respondents, 108 were completed and returned. The response rate was 62%.

Biographical information was obtained from questionnaire items 89 - 94. It included: academic post level, length of employment at the PE Technikon, academic qualifications, age, gender and academic faculty. The results are displayed in Table 5.1.

From Table 5.1 it can be seen that nearly two thirds of the respondents were employed as lecturers and had been employed for less than 10 years, but 25% had been employed for more than 15 years.

The distribution of academic qualifications is of particular importance. Half the respondents have higher postgraduate degrees or diplomas: 42% hold master's (calculated from all categories of master's diplomas/degrees), most of which entail a research component, and 9% doctorates. This overall figure of 51% is slightly higher than institutional statistic of 48%

reported in Chapter 3 (cf. para 3.9.2.2 and Table 3.4). A single respondent held only a National Diploma.

Table 5.1 Description of subjects

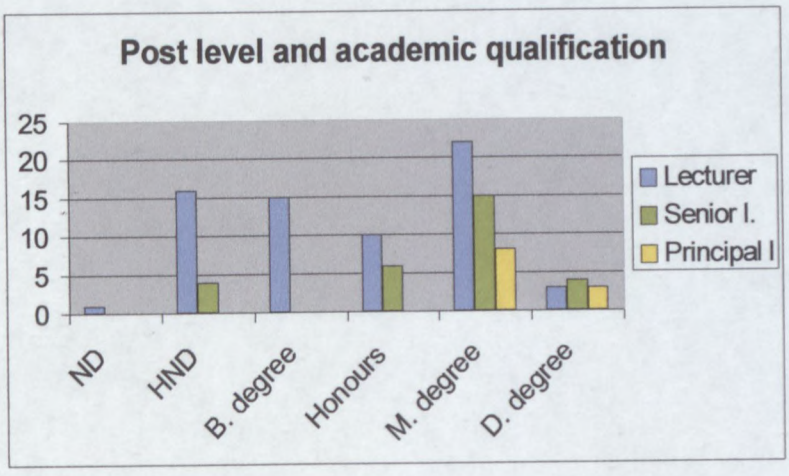
Factor	n	Sample	Count	%
Academic post level	108	Lecturer	67	62%
		Senior Lecturer	29	27%
		Principal Lecturer	12	11%
Length of full time employment at the Port Elizabeth Technikon	108	1- 4 years	25	23%
		5 -9 years	42	39%
		10 - 14 years	14	13%
		15 - 19 years	19	18%
		〉20 years	8	7%
Highest academic qualification	108	National Diploma	1	1%
		Higher National Diploma	21	19%
		M. Dip Tech	9	8%
		B.Tech	8	7%
		M.Tech	10	9%
		D.Tech	0	0%
		B. degree (not B.Tech)	7	6%
		Honours degree	10	9%
		B.Ed	6	6%
		Master's degree	26	24%
		Doctorate	10	9%
Category of Master's degree	46	Research only	25	54%
		Taught only	6	13%
		Research and taught	15	33%
Age	108	20 - 30 years	5	5%
		31 - 40 years	39	36%
		41 - 50 years	43	40%
		〉50 years	21	19%
Faculty	108	Applied Science (30)	24	22%
		Communication and Education (24)	16	15%
		Mechanical and Electrical Engineering (25)	13	12%
		Civil Engineering, Building, Architecture and Agriculture (18)	12	11%
		Computer Studies (21)	9	8%
		Art and Design (18)	7	6%
		Management (18)	10	9%
		Commerce and Governmental Studies(19)	16	15%
		Unknown	1	1%

Key **The figure in parenthesis after each Faculty indicates the total number of questionnaires distributed to that specific Faculty**

A cross tabulation was performed to compare post level and academic qualifications. The results are shown as a graph, Figure 5.1. This indicates that all principal lecturers and 66% of senior lecturers hold either a master's or doctoral degree. In addition, it can be seen that 37%

of those in lecturer posts also hold higher postgraduate degrees. These encouraging figures reflect not only the academic qualification criteria for employment laid down by the institution (cf. para 3.7.2.2, Table 3.3) but also the institutional campaign for staff to upgrade their qualifications.

Figure 5.1 Post level and academic qualifications



Key **B. degree = both categories of B.Tech and other B. degrees**
Hons = Hons + B.Ed
M. Degree = the sum of all categories of master's degrees
The figures on the vertical axis = actual numbers

It should also be remembered that an additional 24% of staff are currently registered for master's and doctoral degrees at technikons and universities. Within two years, therefore, 72% of staff will hold higher postgraduate degrees (cf. para 3.7.2.2.).

Nearly two thirds of the respondents were aged 40 or over, of which 19% were over 50 years. The response rate from the different faculties is also shown in Table 5.1.

The next section of this chapter will report the findings relating to the main work functions of the respondents.

5.3 GENERAL INFORMATION RELATING TO MAIN WORK FUNCTIONS

Questionnaire items 1 - 8 obtained information about the respondents' job description, the degree to which their job had changed, their main work functions, pressure to improve their

academic qualifications and to become involved in research, and their current teaching obligations. The results are shown in Figures 5.2 - 5.10

Figure 5.2 shows that the 87% of respondents never received a clear job description which clearly delineated the functions expected of them. Half of these did in fact receive a written job description, but their functions were not clearly demarcated.

Figure 5.2 Original written job description

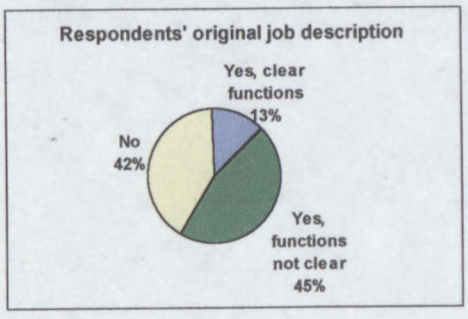
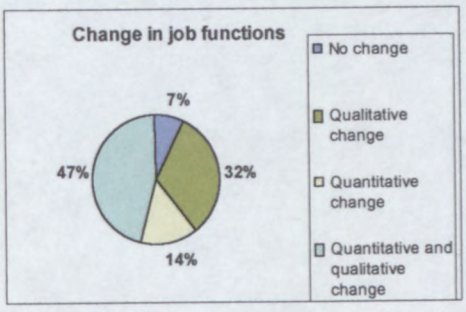


Figure 5.3 Change in job functions



It was anticipated that many staff would report that their job functions had changed; the extent of this was startling. Figure 5.3 shows the magnitude of this response: 93% of respondents revealed quantitative or qualitative changes, or both. A cross tabulation was performed to see if the reported changes varied with the length of employment; this is shown in Table 5.2 For the purposes of this report, only two variables relating to change in job function were used: *no change* and *quantitative and qualitative change*.

Table 5.2 Respondents' length of employment and reported changes in job functions

Years of employment	No change		Q & Q change	
1 - 4 (n=25)	6	24%	5	20%
5 - 9 (n= 42)	0	0%	18	41%
10 - 14 (n=14)	1	7%	11	79%
15 - 19 (n=19)	0	0%	11	58%
20 (n=8)	1	13%	5	63%

Key No change = No change in job functions
Q & Q change = Quantitative and Qualitative change in job functions

Not unexpectedly, those employed for the shortest time reported the least changes in job

function. Contrary to expectations, however, those who had been employed for longer than 20 years did not report the greatest incidence, and a significant 13% of this group reported "no change" at all. One possible interpretation could be that this latter group are those who are often unkindly referred to as "dead wood". Perhaps they do not wish to adapt, or find it difficult to do so, or maybe they are near the end of their career. In reaction they resist or simply ignore changes imposed upon them. Heads of departments may recognise this and consequently do not pressurise them to change their established patterns of work.

It might have been anticipated that the lack of a clear job description, coupled with a changing workload, would have resulted in a degree of ambiguity concerning work functions. This was proved not to be the case. It was unexpected, therefore, to find that nearly 79% of staff reported that they were quite clear about what was required of them in terms of their functions, as shown in Figure 5.4. One explanation for this could be the intervention of heads of departments who make clear to their staff the functions expected of them.

Figure 5.4 Clarity about current functions

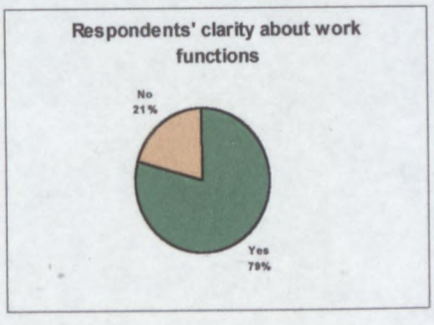


Figure 5.5 Main work functions

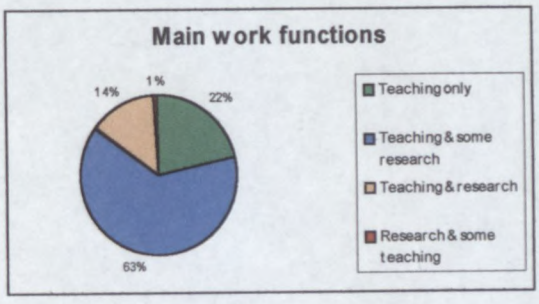
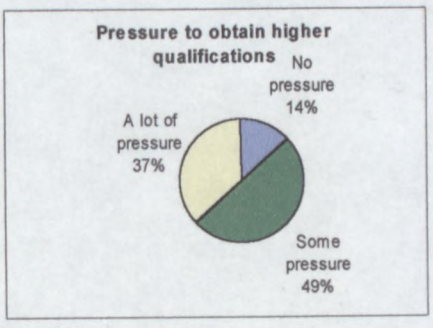


Figure 5.5 illustrates that the majority of staff (78%) reported that their main job function was teaching together with varying degrees of research. Less than a quarter of the respondents were involved in teaching only. That so many respondents indicated their work included research was unexpected, and appears somewhat high. In fact, this figure is contradicted by the response to Question 36 (cf.para 5.8) in which only 58% of respondents indicated having

been involved in formal research during 1999. Three possible reasons are suggested for this over reporting. The first is that respondents may have interpreted "research" differently and therefore included activities that did not fall under the definition of research adopted for this study. The second reason could be that respondents failed to distinguish between research that is part of academic workload and for which they receive a salary, and research undertaken for higher degree purposes which is extrinsic to normal job functions. A third possibility is that research does indeed form part of their workload, but they had not been active during 1999. These ambiguities could have been avoided by including a clear definition of "research" in the questionnaire. That the questionnaire did not do so, constitutes a shortcoming of this study. It can be seen from Figure 5.6 that the majority of staff reported being under pressure to improve their academic qualifications.

Figure 5.6 Pressure to obtain higher academic qualifications



This is a reflection of both CTP (cf. para 3.6.1) and institutional demands for capacity building in this critical area. A cross tabulation, shown in Table 5.3, revealed that this pressure was experienced by lecturers across the board, irrespective of their current academic qualification. Those with lower qualifications more frequently reported being under pressure than those with higher qualifications.

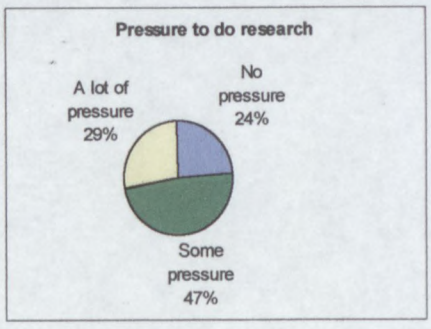
Table 5.3 Pressure to obtain higher qualifications by current qualifications

Qualification	None		Pressure	
ND (n=1)	0		1	100%
HND (n=21)	1	5%	20	95%
Both categories of B (Tech, degree) (n=15)	1	7%	14	69%
Hons degree + B.Ed (n=16)	3	19%	13	81%
All categories of Master's (n=45)	11	24%	34	76%

Key None = no pressure
Pressure = some pressure + considerable pressure

The majority of staff also reported pressure to become involved in research (Figure 5.7).

Figure 5.7 Pressure to become involved in research



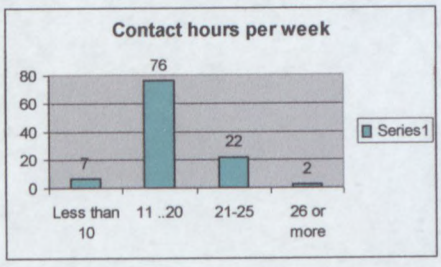
This, too, is a reflection of the institution's vision and the need to raise its research profile. Pressure to improve qualifications and conduct research were also reported amongst academic staff in the new universities of the UK and Australia (cf. para 4.5.2).

Figures 5.8, 5.9, and 5.10 indicate current teaching obligations. Most respondents reported:

- teaching between two and five courses, the mode being three
- contact hours of 11 - 20
- and class sizes of 50 or less.

The range of contact hours corresponds with the institutional statistics reported in Chapter 3 (cf. par.3.7.2.3) in which average hours for 1999 were 19, but ranged from 12 to 32.

Figure 5.8 Number of contact hours per week **Figure 5.9 Number of courses taught**



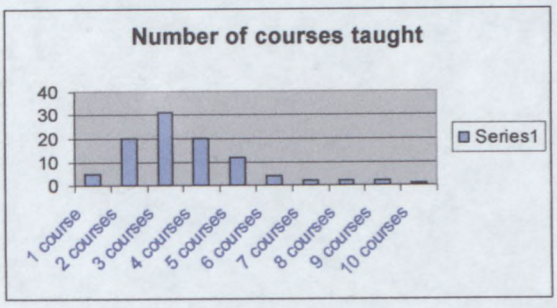
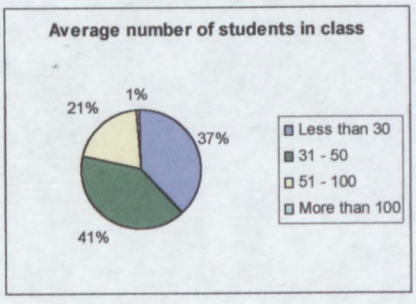


Figure 5.10 Class size



A cross tabulation, Table 5.4, shows how contact hours varied with post level. There was little difference in the number of contact hours between the different post levels, except that the number of respondents who reported contact hours of less than 10 hours increased with seniority.

Table 5.4 Contact hours and post level

Post level	10		11 - 20		21 - 25		26	
Lecturer (n=66)	2	3%	47	71%	16	24%	1	2%
Senior (n=29)	3	10%	21	72%	4	14%	1	3%
Principal (n=12)	2	17%	8	67%	2	17%	0	0%

If these contact hours are compared with those suggested by the institution (cf. para 3.7.2.3, Table 3.5), it is clear that the majority of principal lecturers are exceeding the recommended 10 hours per week. Unfortunately, it is not possible to establish whether senior lecturers are

exceeding the recommended 15 hours per week. This would have been possible by separating the category 11 - 20 hours into 11 - 15 hours and 16 - 20 hours. This is another shortcoming of this study. It is also very notable that 22% of all the respondents are exceeding the institutional maximum of 18 - 20 hours.

It can be calculated that for contact hours of 11 - 20, most respondents are spending between 22 and 40 hours on their teaching function alone (cf. para 3.7.2.3). In addition, 22% spend between 42 and 50 hours. This leaves little time for undertaking other workload activities such as research, service and scholarship.

Summary

Most respondents reported that they did not receive a written job description which clearly delineated the functions expected of them and that they had experienced varying degrees of role change. In general, the longer the employment period the greater the percentage of those who reported change. In spite of this, most indicated that they were clear about what was expected of them in terms of their job functions. The main work functions were shown to be teaching combined with different amounts of research, although it would appear that this was over reported. There was extensive evidence of pressure to upgrade academic qualifications and to become active in research.

Most staff reported teaching between 2 and 5 courses and contact hours of 11 - 20 per week. The number of contact hours was shown to be fairly evenly distributed across all post levels, except for the fact that the number of respondents that indicated hours of less than 10 per week, increased with the seniority of post level. Overall, nearly one quarter of lecturers exceed the institutional guidelines for contact hours, and this was particularly marked among principal lecturers.

The next paragraph of this chapter outlines the results relating to occupational functions other

than teaching and research.

5.4 OTHER WORKLOAD FUNCTIONS

Questionnaire items 10 - 19, aimed at obtaining information about the respondents' involvement in activities other than teaching and research. They were asked to rank the frequency of their involvement in management, administration, service, consultancy, entrepreneurial enterprises, and the supervision of master's and doctoral students. Although supervision of postgraduate students is an activity usually associated with the teaching function, it was considered sufficiently important to merit separate inclusion. The results not only provide evidence of the type of activity lecturers were involved in, but they also give a very broad indication of the relative amount of time spent on each. The results are shown in Table 5.5

Table 5.5 Respondents' involvement in other workload components

Function	Frequent		Sometimes		Total % involvement	Never	
Management (n=105)	34	32%	56	53%	85%	15	14%
Administration (n=106)	88	83%	16	15%	98%	2	2%
Service to the P.E Technikon (n=106)	33	31%	50	47%	78%	23	22%
Service to profession (n=105)	31	29%	42	40%	69%	32	30%
Consultancy work (n=105)	17	16%	46	44%	60%	42	40%
Service to the community (n=103)	11	11%	53	51%	62%	39	38%
Organising short courses (n=104)	18	17%	42	40%	57%	44	42%
Other entrepreneurial activities (n=104)	7	7%	27	26%	33%	70	67%
Supervising Master's students(n=105)	16	15%	19	18%	33%	70	67%
Supervising Doctoral students (n=104)	3	3%	2	2%	5%	99	95%

Key **Frequent = the sum of the categories *very often* and *often***
Total % involvement = the total % of responses in the categories *very often, often and sometimes.*

The category *total % involvement* will be used to report the results and only if significant will the other figures in the table be mentioned.

Table 5.5 indicates that administration, management and institutional service were the most

widely reported workload activities. Administration is almost universal, and if the number of respondents (83%) who indicated frequent involvement is taken as a guideline, then administration is clearly time consuming. It is perhaps surprising that so many reported management activities, but this could be due to different interpretations being placed on management. For example, it could have been interpreted in the context of managing the teaching/learning situation or managing short courses, rather than in the more traditional sense of departmental or institutional management. A more appropriate indicator is that the number of respondents who indicated frequent involvement was only 32%, which is less than half the number of respondents who reported frequent involvement in administration. This could be explained by the fact that management functions usually increase with the seniority of post level. A cross tabulation, shown in Table 5.6, confirmed this to be the case.

Table 5.6 Management function and post level

Post level	Frequent		Sometimes		Never	
Lecturer (n=65)	16	25%	35	54%	14	22%
Senior (n=28)	11	39%	17	61%	0	0%
Principal (n=12)	7	58%	4	33%	1	8%

The service function was separated into institutional, community, professional, and consultancy components. It can be seen from Table 5.5 that the overall percentage involvement in these workload components decreased to 60%. Cross tabulations were performed to see if community and professional service involvement varied between Faculties. After the cross tabulations were completed, the total number of responses to the categories *very often, often* and *sometimes* were added and calculated as a percentage of the total number of respondents from the particular Faculty. The results are shown in Table 5.7 and Table 5.8

Table 5.7 Involvement in professional service per Faculty

FACULTY	No	%
Applied Science (n=24)	15	63%
Communication & Educational Studies (n=16)	10	63%
Mechanical & Electrical Engineering (n=13)	11	85%
Civil Engineering (n=12)	12	100%
Computer Studies (n=9)	4	44%
Art & Design (n=7)	4	57%
Management (n=10)	7	70%
Commerce & Governmental Studies (n=16)	10	63%

Three faculties, Mechanical and Electrical Engineering, Civil Engineering and Management had the greatest proportion of staff who were involved in professional service.

Table 5.8 Involvement in community service by Faculty

FACULTY	No.	%
Applied Science (n=24)	10	42%
Communication & Educational Studies (n=16)	11	69%
Mechanical & Electrical Engineering (n=13)	6	46%
Civil Engineering (n=12)	9	75%
Computer Studies (n=9)	5	56%
Art & Design (n=7)	4	57%
Management (n=10)	7	70%
Commerce & Governmental Studies (n=16)	10	63%

Civil Engineering and Management were also the most active in community service (Table 5.8). It is perhaps not surprising that so many staff in the two engineering faculties were involved in professional service since engineering is widely regarded as having the status of a profession.

Academic workload studies (cf. para 4.6.2) had indicated that the service function tends to increase with post level. Cross tabulations were performed to determine if this was the case at

the PE Technikon. The results, shown in Tables 5.9 and 5.10, support this finding.

Table 5.9 Institutional service and post level

Post level	Frequent		Sometimes		Never	
Lecturer (n=65)	14	22%	31	48%	20	31%
Senior (n=29)	10	34%	17	59%	2	7%
Principal (n=12)	9	75%	2	17%	1	8%

Table 5.10 Involvement in professional service and post level

Post level	Frequent		Sometimes		Never	
Lecturer (n=64)	14	22%	24	38%	26	41%
Senior (n=29)	10	34%	13	45%	6	21%
Principal (n=12)	7	58%	5	42%	0	0%

Entrepreneurial activities were separated into organising short courses and other profit making enterprises. Referring to Table 5.5, it can be seen that 57% of respondents had been involved in running short courses, this also corresponds with the 55 - 60% reported by Pretoria Technikon (cf. para 4.5.4). A cross tabulation was performed to determine if involvement in short courses varied according to faculty. After the cross tabulations were completed, the total number of responses to the categories *very often, often* and *sometimes* were added and calculated as a percentage of the total number of respondents from the particular Faculty. The results, shown in Table 5.11 (on the following page), indicate that the Faculties of Communication & Educational Studies and Management reported the greatest involvement in running short courses.

The final items relating to workload referred to the supervision of postgraduate students. From Table 5.5 it can be seen that only 33% of staff reported that they had supervised master's and 5% doctoral students.

Table 5.11 Involvement in short courses by Faculty

FACULTY	No	%
Applied Science (n=24)	12	50%
Communication & Educational Studies (n=16)	12	75%
Mechanical & Electrical Engineering (n=13)	8	62%
Civil Engineering (n=12)	5	42%
Computer Studies (n=9)	5	56%
Art & Design (n=7)	3	43%
Management (n=10)	7	70%
Commerce & Governmental Studies (n=16)	8	50%

Summary

Administration was the most widely reported workload component, followed in descending order by management, service and entrepreneurial activities. Involvement in professional and community service, and organising short courses was found to be greater in some faculties than others. Only one third of respondents indicated that they supervised master's students and 5%, doctoral students.

5.5 SCHOLARLY ACTIVITIES

Questionnaire items 20 - 26, collected data pertaining to the respondents' involvement in scholarly activities, the aim of which is to advance knowledge and learning in the lecturer(cf. par 4.2.4, p.49) It included activities concerning the respondents' individual field of specialisation, teaching and computer technology. Computer technology included learning to use common software applications, for example word processing, spreadsheets and e-mail, which are indispensable to the performance of administrative functions. It also included learning to use technologies that support the teaching function, for example multimedia, video conferencing, software programmes for presenting lectures, the internet and the intranet.

The results, shown in Table 5.12, provide evidence of the type of scholarship activity with which lecturers were engaged and the relative amount of time spent on each. The item responses, *very often, often* and *sometimes* are subjective and it is not possible to infer from them the actual amount of time each represents.

Table 5.12 Respondents' involvement in scholarship activities

Activity	Very often or often		Sometimes		Total % involvement	Never	
Investigation into own field (n=107)	79	74%	25	23%	97%	3	3%
Discussions with colleagues (n=107)	70	65%	34	32%	97%	3	3%
Investigation into teaching (n=107)	54	50%	49	46%	96%	4	4%
Investigation into assessment (n=107)	52	49%	46	43%	92%	9	8%
Learning new software (n=107)	65	61%	40	37%	98%	2	2%
Learning to use technologies (n=107)	46	43%	49	46%	89%	12	11%
Attending development activities(n=107)	32	30%	62	58%	88%	13	12%

Key **Total % involvement = sum of the categories *Very often, often* and *sometimes***

It should be remembered that scholarship is not a workload function per se, but an activity expected of all academic staff and therefore involvement in these activities represents an expenditure of time ancillary to the main functions for which lecturers are employed. From Table 5.12 it can be seen that the vast majority of staff were involved in all the mentioned activities. The activities which appear to consume the most time were informal investigations in own discipline or field, followed by discussions with colleagues. 61% of respondents also reported frequent involvement in learning new computer software programmes. This is not unexpected since the PE Technikon has recently changed all its software applications. It is, however, a significant finding because it gives an indication of just how important maintaining computer literacy has become to the lecturer. Computer literacy is a skill that is essential to the successful performance of work activities and, in particular, administrative functions associated with teaching.

Summary

The results show almost universal involvement in scholarship activities. Those that were most frequently reported were investigations into own discipline, discussions with colleagues and learning new software applications. Scholarship activities in teaching and learning were less frequently reported.

The next section, paragraph 5.7, will describe the results about how the respondents would prefer to allocate their time on the different workload components.

5.6 RESPONDENTS' PREFERENCES WITH RESPECT TO TIME ALLOCATED TO THEIR WORK FUNCTIONS

The purpose of questionnaire items 27 - 35, was to obtain data about how respondents, given the choice, would devote their time to their various job functions. This could provide an indication of either personal interest in or the perceived value attached to a particular activity. For example, a respondent who indicated that he or she would spend no time at all on an activity might be expressing a lack of interest. Alternatively, it might indicate that the respondent attached little value to the activity. In addition the results obtained from these items might also give a broad idea of satisfaction. It might be inferred that respondents who reported that they would spend the same amount of time on an activity were satisfied with the status quo. The findings are displayed in Table 5.13, shown on the following page.

The results show that for six of the activities, between 49% - 64% of respondents would choose to continue the status quo. The results referring to teaching are interesting with most lecturers being satisfied with the amount of time they are currently spending, and nearly 10% wishing to spend more time on this function. It can be seen, however, that over a quarter of the respondents would spend less time on teaching. It is possible that these respondents are those that reported high contact hours and teaching many courses (22% of staff reported

contact hours of more than 20, and teaching 5 or more courses).

Table 5.13 Respondents' preferences regarding the time spent on job functions

Activity	More time		Same time		Less time		No time	
Teaching (n=107)	10	9%	68	64%	28	26%	1	1%
Formal research (n=106)	69	65%	16	15%	6	6%	15	14%
Keeping up to date in own discipline (n=107)	79	74%	25	23%	3	3%	0	0%
Keeping up to date with teaching, etc(n=105)	49	47%	51	49%	4	4%	1	1%
Entrepreneurial activities(n= 104)	48	46%	37	36%	3	3%	16	15%
Service to institution/department(n=103)	9	9%	64	62%	17	17%	13	13%
Service to profession(n=104)	25	24%	67	64%	5	5%	7	7%
Service to the community(n=104)	28	27%	59	57%	6	6%	11	11%
Management and administration(n=105)	2	1%	53	50%	41	39%	9	9%

The responses to research are noteworthy, showing that 65% wished to devote more of their time to this function. This corresponds with similar findings identified by workload studies (cf. para 4.6.2). In this study, it is not possible to determine whether this indicates a personal interest in research or is due to respondents placing greater value on research. The latter interpretation could be due to the perception that research carries more prestige and reward than teaching.

The finding that 14% of respondents would choose not to be involved in research is confounding since the response to Question 52 indicated that only 7% of staff have no research interests. This discrepancy will be discussed in paragraph 5.11.

Workload studies showed that with increasing age, interests shifted from research to teaching (cf.para 4.6.2). It is not possible to determine if this is the case in this study. A cross tabulation, shown in Table 5.14, was performed to establish whether the amount of time respondents would choose to spend on research (as a possible indicator of interest) varied with age. The results are unremarkable, other than showing that the number of respondents

who indicated that they would spend less time on research, increased with age.

Table 5.14 Respondents' age and their choice of time spent on research

Age	More time		Same time		Less time		No time	
20 - 30yrs (n=5)	3	60%	2	40%	0	0%	0	0%
31 - 40 yrs (n=38)	28	74%	5	13%	1	3%	4	11%
41 - 50 yrs (n=43)	27	63%	7	16%	3	7%	6	14%
More than 50(n=20)	11	55%	2	10%	2	10%	5	0%

It is also apparent from Table 5.13 that the majority of lecturers considered that they needed to devote more time to keeping up to date in their discipline. Although many were satisfied with the time spent on administration, nearly 40% of lecturers indicated that they would spend less time than at the present. It could be interpreted that these respondents dislike their administrative function, or that they consider themselves over burdened with administration. Nearly half the respondents also indicated that they would spend more time on entrepreneurial activities and scholarship in teaching and learning.

Summary

Between 49% and 64% of respondents appeared to be satisfied with the amount of time they devote to 6 of the 9 scholarship activities. More time would like to be spent on scholarship activities relating to own discipline and to teaching and learning, research and entrepreneurial projects. Less time would like to be spent on administration and management, and teaching. 14% indicated that they would prefer to devote no time to research.

The next section, paragraph 5.8, will report the results concerning the respondents' research activities and interests.

5.7 RESPONDENTS' RESEARCH ACTIVITIES AND INTERESTS

Items 36 - 50 and 52, sought information about the respondents' interests and involvement in formal research and related activities; journal publications, presenting papers at conferences, writing a book or chapter thereof, and exhibiting artefacts. The results are shown in Figures 5.11, 5.12 and 5.13 and Tables 5.15, 5.16 and 5.17. It should be noted that the referent population reported in Tables 5.15, 5.16 and 5.17 are only those who responded positively to Questions 36, 37 - 41, 42, 43 - 50.

Figure 5.11 Number of respondents who were involved in formal research

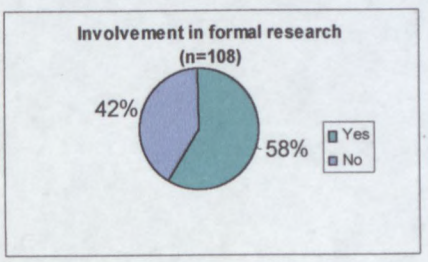


Figure 5.12 Number of respondents who published or presented a paper at a conference

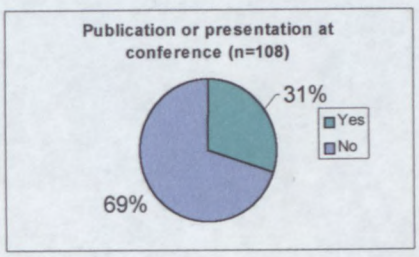


Table 5.15 Types of research with which respondents were involved

Type of research	Yes (n=63)	
Leading to M or D degree	44	**70%**
Individual 'ad hoc'	35	**56%**
Departmental 'ad hoc'	22	**35%**
Action research into teaching	11	**17%**
Contract research	21	**33%**

Key: **The numbers add up to more than 63 since respondents could select more than one option when responding to this item.**

Table 5.16 Types of publication

Publication	Yes (n=33)		Total %
Peer reviewed journal	14	42%	13%
Non- peer reviewed	7	21%	6%
Popular press	7	21%	6%
Article submitted - no outcome	7	21%	6%
Refereed an article	5	16%	5%

Key: **The numbers add up to more than 33 since respondents could select more than one option when responding to this item.**

The Total % in the right hand column refers to the total population, n= 108.

Table 5.17 Other activities related to research

Activity	Yes (n=33)		Total %
Presented a paper	26	79%	24%
Written a book/chapter	8	24%	7%
Exhibited an artefact	1	3%	1%

Key: **The numbers add up to more than 63 since respondents could select more than one option when responding to this item.**

The Total % in the right hand column refers to the total population, (n=108)

It can be seen from Figures 5.11 and 5.12 that over half of the respondents had been involved in some type of formal research. This figure is considerably less than the 78% of respondents who indicated that their main job function was teaching and varying amounts of research (cf. para 5.4). Most of the research was conducted for the purposes of higher academic qualifications. It is also apparent from Table 5.15 that some of the respondents had been involved in more than one type of research activity. Action research into teaching was the least reported type of research. Figure 5.12 shows that despite the number of staff involved in research, the number of respondents that had published or presented a paper was considerably lower at only 31% .

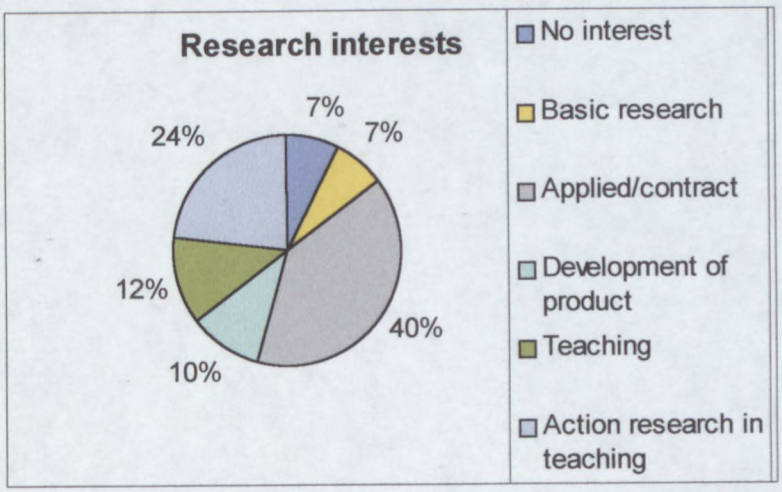
Table 5.16 indicates the types of publication and it can be seen that only 13% of the total number of respondents had published in peer reviewed journals. This figure could be higher, since a further 7 respondents indicated that they had submitted articles but had yet to hear the outcome. An equal number had together published in non-peer reviewed journals and the popular press . It is again apparent from Table 5.16 that some of the respondents had published in more than one type of publication. Very few had refereed a journal article. It is not possible to establish with certainty how many respondents overall had published for two reasons: some respondents had published in more than one type of publication and questionnaire item 42 did not distinguish between publication and other research related activities. This is a further shortcoming of this study, and could have been avoided by changing the construction of item 42. Although it was not possible to determine accurately the number of respondents who had published, it is clearly a small number - which corresponds with the findings of workload studies (cf. para 4.6.2). It should also be remembered that the primary aim of technikon research is not publication (cf. para 3.4.2). Other activities which could either be viewed as research related or alternatively as scholarship activities are shown in Table 5.17. It can be seen that nearly 25% of the total number of respondents had presented a paper at a conference. Not surprisingly, only 7% of respondents had either written or co-authored a book or chapter of a book, and only one person had exhibited an artefact.

The data obtained from item 52 was important as it showed where the respondents' research interests lay. Figure 5.13 displays the results.

A very encouraging finding for the institution is the very small number of staff, just 7%, who have no interest in research at all. As reported earlier in paragraph 5.7, this result is conflicting and will be further discussed in paragraph 5.11. Not surprisingly, given the nature

of technikon research (cf. para. 3.5.2), applied or contract research was the most widely reported. It can also be seen that a very similar number, 35%, indicated interest in some form of research into teaching and learning.

Figure 5.13 Respondents' research interests



Summary

Nearly 60% of staff indicated that they had been involved in formal research which was mainly for the purposes of obtaining master's or doctoral degrees. Action research into teaching and learning was the least reported type of research. The numbers who had published or presented a paper at a conference (or similar) were much lower. Publication in a peer reviewed journal was the most frequently reported publication, but this only applied to 13% of the entire study population. Nearly one quarter of all respondents had presented a paper at a conference or similar gathering.

5.8 RESPONDENTS' OPINIONS REGARDING RESEARCH INVOLVEMENT

These questionnaire items, 53 - 62, were directed at obtaining data relating to lecturers' opinions regarding some of the issues relating to the teaching and research functions, including whether or not they supported the vision of the institution. The full results can be

found in Appendix G, but for the purpose of reporting the data the tables have been collapsed to two response categories: *agree* and *disagree*.

Questions 53 - 56 sought the opinion of the respondents about which lecturers should be involved in research activities. Table 5.18 shows the results.

Table 5.18 Which academic staff should be involved in research?

Post level	Agree		Disagree	
All lecturers (n=99)	48	48%	51	52%
Only senior lecturers & above (n=95)	19	20%	76	80%
Only principal lecturers & above (n=95)	21	22%	74	78%
Any lecturer but only if he or she wishes it (n=105)	76	72%	29	28%

It can be seen that staff were more or less equally divided over whether research involvement should apply to all lecturers, irrespective of the post level. There was, however, a clear majority who did not support the suggestion that research be the exclusive prerogative of senior and principal lecturers, but that it should be a voluntary activity that applied to any post level. It might have been expected that in view of the divided response to the first statement (all lecturers), the responses to the other statements would show a similar response. In other words those who agreed with the statement that all lecturers should be involved in research would disagree with the subsequent statements. It is probable that "all" was ambiguous, this could have been avoided by specifying more clearly that it referred to each and every lecturer irrespective of post level. Again, this constitutes a weakness in the design of the questionnaire. These findings suggest that lecturers agree with a point made in Chapter 3 (cf. para 3.4.3, p.27) that management should not mandate research involvement, and that interest and motivation are the best indicators of research productivity (cf. para. 4.6.2, p.68).

Items 57 - 62 acquired data relating to a number of important issues: the benefits of research

involvement, the status accorded to teaching and research, and support for the vision of the institution (cf. para 3.9.3). The results are reported in Table 5.19.

Table 5.19 Respondents' opinions about research at the P.E Technikon

Statement	Agree		Disagree	
Involvement in research is necessary for good teaching(n=107)	77	72%	30	28%
ND students would benefit from lecturer's involvement in research (n=107)	81	76%	26	24%
B.Tech students would benefit from lecturer's involvement in research (n=107)	100	93%	7	7%
Research carries more prestige than teaching (n=107)	62	58%	45	42%
In this institution, teaching is given the same recognition as research (n=107)	20	19%	87	81%
I agree and support the PET vision (n=107)	67	63%	40	37%

In keeping with international research findings reported in Chapter 4 (cf. para 4.3.2, 4.3.3) it can be seen that there is a strong, but possibly erroneous perception that research involvement is a pre-requisite for effective teaching, and that students benefit from this. The perception that research is more prestigious than teaching is prevalent, but somewhat weaker. It is very conspicuous that the majority of respondents were of the opinion that the PE Technikon does not give the same recognition to teaching as it does to research. This was also pointed out by many respondents in final open ended item of the questionnaire (Question 95). It is noteworthy that over a third of its academic staff do not support the institutional vision and it would be interesting to know the reason. The responses to earlier questions regarding research interests (cf. para 5.8, Figure 5.13) and their preferences regarding the time spent on job functions (cf. para 5.7, Table 5.13) together suggest that attitudes to research involvement are positive. If this is the case, then this cannot be the reason for not supporting the institutional vision. Perhaps the reason lies more with the how the vision has been "sold" to academic staff. Alternatively, perhaps lecturers are responding to an awareness of "mission

drift" mentioned in Chapter 4 (cf. para 4.3.4). An additional open ended item in the questionnaire might have clarified this issue. Without significant support from the academic staff, the realisation of the vision will be hampered.

The next section of the chapter describes the findings relating to the number of hours worked per week by lecturers.

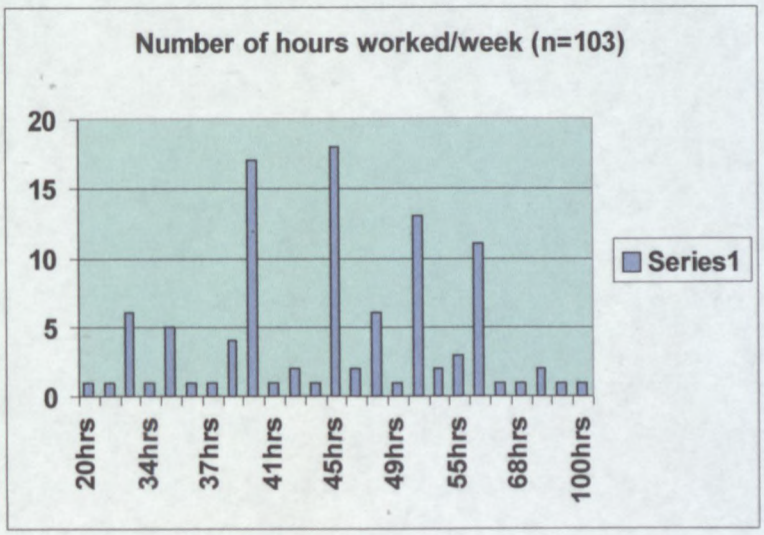
5.9 HOURS WORKED PER WEEK BY RESPONDENTS

Question 51 asked the respondents to estimate the amount of time that they spend on all their occupational functions. This was to obtain an indication of the length of an average working week. The results are shown in Figure 5.14.

It can be seen from Figure 5.14 that the range, 81, was very wide. The respondent who indicated 100 hours was contacted personally, and this response was verified. The respondent who reported 91 hours was contacted by e-mail but no reply was received.

The most appropriate indicator of central tendency with such a wide range is the mode. It can be seen that the distribution is bimodal: 40 and 45 hours. There are two other frequency peaks at 50 and 60 hours.

Figure 5.14 The number of hours worked per week by the respondents



The numbers who reported estimates of 40 and 45 hours (38%) and 46 and 60 hours (37%) were almost equal. 19% of respondents worked 38 hours or less, 47% between 40 and 49, and 34% more than 50 hours per week. Overall, 75% of respondents (n=103) indicated a working week of 40 - 60 hours.

It is interesting to observe that these results approximate the research findings of academic workload studies (cf. para 4.6.2), the two figures most frequently reported in these studies was 55 and 45 hours per week.

If these reported hours are related back to the institutional guidelines for contact teaching hours and the derived figure of a 38 - 40 hours working week (cf. para 3.7.2.3) it can be seen that only 19% of academic staff work a "regulation" week, the majority work longer hours. These results were cross tabulated with respondents' main work functions (Figure 5.5). The results are shown in Table 5. 20. For the purpose of cross tabulation, the hours per week were grouped into four categories: 20 - 38, 40 - 43, 45 - 49, 50 -100 . In addition, all three categories of teaching and research were added so that a more direct comparison could be made between those who were involved in research and those who were not.

Table 5.20 Main job functions and length of working week

Job function	20-38 hrs		40 - 43 hrs		45 - 49 hrs		50 - 100hrs	
T only (n=22)	6	27%	6	27%	7	32%	3	14%
T + R (n=79)	14	18%	15	19%	19	24%	31	39%

Key T. only = teaching only
T + R = all categories of teaching and research

Table 5.20 shows that the responses from those who teach only were distributed fairly evenly between the first three categories. Very few however (14%), reported working 50 - 100 hours compared to 39% of those who had research responsibilities. It should be remembered that 34% of all respondents indicated that they worked more than 50 hours a week (cf. Figure

5.14), therefore the majority were those with research functions. In general, those whose job included research more frequently reported working longer hours: 63% worked more than 45 hours compared with only 45% of those who only teach. Conversely, 55% of those who had no research functions worked less than 43 hours compared with 37% of those who taught and conducted research.

Summary

The range of hours worked per week was wide. The most frequently reported being 40 and 45 hours. Approximately one fifth of respondents work 38 hours or less, nearly one half between 40 and 49, and over one third work more than 50 hours per week. Those whose main job functions included teaching and research reported longer working hours, particularly in the category 50 - 100 hours. The converse was the case for those working 20 - 38 hours. The next section of this chapter will review the factors which hamper research involvement.

5.10 FACTORS THAT HAMPER RESEARCH INVOLVEMENT

These 12 items (Questions 63 - 74) sought information about the factors that discourage involvement in formal research. Respondents were asked to respond to each item as it applied to their own situation. For the purpose of reporting the data, the tables have been collapsed from an original four categories of response: *strongly agree, agree, disagree* and *strongly disagree* to two, namely, *agree* and *disagree*. The full table is included in Appendix G.

Table 5. 21 Factors which discourage formal research involvement

Statement	Agree		Disagree	
Lack of a research culture(n=106)	36	34%	70	66%
No personal interest in research(n=106)	32	30%	74	70%
A greater interest in teaching(n=107)	62	58%	45	42%
Not enough time due to teaching commitments(n=107)	92	86%	15	14%
Not enough time due to other job functions(n=107)	90	84%	17	16%
Little encouragement from HOD(n=105)	30	29%	75	71%
Lack of personal research experience(n=107)	47	44%	60	56%
Lack or research experience in colleagues(n=104)	32	31%	72	69%
Complicated application procedures for funding(n=104)	75	72%	29	28%
Inadequate physical resources(n=105)	42	40%	63	60%
Little administrative support(n=104)	55	53%	49	47%
Lack of technical support(n=103)	64	62%	39	38%

From Table 5.21 it can be seen that the main factors which hinder formal research involvement are lack of time due to teaching and other job functions, and application procedures for obtaining funding. It is confusing that 30% indicated that lack of personal interest in research was a deterrent, which is not consistent with the 7% who reported having no research interests to Question 52 (cf. Figure 5.13). The results were double checked and then a cross tabulation (Table 5.22) between item 64 (no personal interest in research) and item 52 (research interests) was performed to obtain further clarification. The four categories *strongly agree, agree, disagree and strongly disagree* were collapsed to 2: *agree, disagree*.

Table 5.22 Cross tabulation between research interests and no interest in research

	No interest	Basic research	Applied research	Development of products	Research into teaching	Action research into teaching
Agree (n=32)	5	2	8	3	3	11
Disagree(n=73)	3	5	34	8	10	13

Key: **Agree = strongly agree + agree to questionnaire item 64**
Disagree = disagree + strongly disagree to questionnaire item 64

Table 5.22 clarifies these confounding results. It can be seen that of the 32 respondents who indicated that they agreed with the statement "no personal interest in or motivation for research" only 5 reported that "research does not interest me at all". It can also be seen that 3 of the 73 respondents who indicated that they agreed with the statement, stated that they had no interest in research. The research finding relating to lack of interest in research as a factor that discourages research involvement should probably be discounted. It would appear that the number of respondents citing lack of interest in research as an impediment to research involvement is actually much lower, and according to the cross tabulation is either 5% or 7%. In view of earlier positive findings relating to research and research interests, it is surprising that nearly 60% of staff indicated that they were more interested in teaching. This could be a reflection of the traditional teaching mission of the institution and although academic staff may be interested in conducting research they are more interested in teaching. The literature review indicated that the past teaching-only mission was a factor hampering research at technikons(cf. para 3.4.3). Lack of a research culture and encouragement from heads of department were not considered impediments by most respondents. The results relating to lack of personal research experience mirror the findings to question 36 (cf. para 5.8, Figure 5.11) and involvement in formal research. It is probable that the 58% of respondents who indicated involvement in formal research constituted the 56% who disagreed that lack of personal experience discouraged research activity.

5.11 RESPONDENTS' CONFIDENCE IN SPECIFIC RESEARCH SKILLS

Questions 75 - 88 obtained data with respect to specific research skills and the respondents' confidence in each. This data was important in that it would have implications *vis-a-vis* capacity building in terms of research and staff development. The results are shown in Table 5.23. For the purposes of reporting, the categories *very confident* and *confident* were

combined under *confident*.

Table 5.23 Respondents' confidence in research skills

Skill	Confident		Not confident	
Identifying a research problem(n=105)	80	76%	25	24%
Choosing a methodology(n=105)	73	70%	32	30%
Undertaking literature search (n=105)	85	81%	20	19%
Preparing a proposal(n=105)	81	77%	24	23%
Applying for funding (n=105)	48	46%	57	54%
Writing reports etc (n-104)	68	65%	36	35%
Writing in English (n=105)	99	94%	6	6%
Use of statistical tests (n=105)	52	50%	53	50%
Interpreting statistics (n=105)	56	53%	49	47%
Sampling techniques (n=105)	64	61%	41	39%
Compiling questionnaires (n=105)	64	61%	41	39%
Designing action research (n=104)	58	56%	46	44%
Designing a study (n=105)	64	61%	41	39%
Supervising research students (n=105)	59	56%	46	44%

Table 5.23 shows that, overall, more respondents felt confident in their abilities to undertake research than those who did not. This was particularly so for undertaking a literature search, preparing a proposal and writing in English. However, the number of respondents who indicated lack of confidence was, for many items, quite considerable and for 7 of the items ranged between 39% to 54%. The problem skills would appear to be the use and interpretation of statistics and applying for funding. In view of the fact that only 33% of respondents have supervised master's and 5%,doctoral students (cf.para.5.5, Figure 5.5), it is perhaps surprising to see that more than half feel confident to supervise postgraduate students.

5.12 RESPONDENTS' COMMENTS

The last item of the questionnaire (Question 95) gave respondents the opportunity to contribute their own comments. 37 (34%) completed this section.

There was a wide variety of comments covering different issues, which have been grouped under the following areas: research at the PE Technikon, teaching at the PE Technikon, general working conditions, comments about the questionnaire, and comments about the research topic(which have not been reported).

Research at the PE Technikon

- *Type of research*

  Those who commented on the type of research undertaken at the institution all indicated that technikon research should concentrate on research projects that either have direct value or benefit to the community. Alternatively it should benefit the core functions of teaching and learning or be aimed at improving educational programmes. Academic and "high tech" research should be left to the universities. One respondent indicated that there should be more emphasis on action research. Another was of the opinion that some of the research that is being undertaken is self-promoting and detrimental to teaching.

- *Research as a work function*

  One respondent commented on the need to include research in a lecturer's job description. The current perception amongst lecturers is that research is not part of their workload.

- *Workload of those who are involved in research*

  A number of respondents commented on the unequal workload distribution of lecturers not involved in research, i.e those not involved in research have a lighter

workload. The comment was made that because not all lecturers are involved in research, those who were "carried the entire research programme". To balance this, those who were not involved in research should carry an increased teaching load. A "relief lecturer" was suggested to assist with teaching loads for those lecturers motivated to do research.

- *Reasons for not being involved in research*

  There were a number of respondents who cited lack of time for research - due to overloaded teaching responsibilities and keeping up to date with developments. Lack of motivation for research was mentioned by a few lecturers in the older age groups. One respondent pointed out that some subjects were not traditionally associated with research, a fact that the institution needed to recognise.

- *Other comments about research*

  The following remarks are particularly relevant.

  "If you had got me a year ago, I would have answered very negatively on the research issue. I have since been involved in a successful project which has built confidence and changed my perspective."

  One respondent indicated support of the institutional vision to become a technological university (cf. para 3.9.3) , but professed a lack of confidence in upper management and the Rectorate to lead the institution to reach its goals.

Teaching at the P.E Technikon

There were many comments about the increasing emphasis, rewards and incentives given to those who are involved in research. Many respondents pointed out that teaching is the primary mission of the PE Technikon and yet it is neglected when compared to research. Excellence in the classroom is overlooked and there are no rewards for the dedicated teacher.

More emphasis and recognition need to be given to teaching.

General working conditions

One respondent wrote that lecturers were having to work harder in order to generate sufficient staff points (cf.para 3.9.2.1) to pay salaries. This involved both classroom teaching to improve student pass rates and the development of marketing strategies aimed at attracting more students to register for courses.

Another respondent commented on the fact that the concept of "contact hours" (cf. para 3.9.2.3) does not give the full picture of workload.

This paragraph concludes the report of the results of this study.

5.13 LIMITATIONS OF THE EMPIRICAL STUDY

According to Leedy (1993) it is almost impossible to avoid bias of some description in a research study. The following is a description of the possible sources of biased data in this study.

Although the response rate of 62% was reasonable - higher would have been better in terms of the validity and reliability of the findings. Moreover it must be mentioned that the validity of the empirical findings of this study is directly related to the degree to which the respondents' feedback corresponds to their actual workload - and therefore to the accuracy of self reported data. It is, therefore, possible that respondents consciously or unconsciously over reported their work activities. This could very well have happened in Question 52, where respondents were asked to estimate the total number of hours they work in a typical working week The emphasis of this study is therefore on the perceptions and opinions of academic staff regarding their academic workload rather than actual workload. Further, a biased sample can result when a 100% response rate is not achieved and therefore the validity of these findings can be called into question (Leedy, 1993). There is no reason to suppose that

those who did not complete the questionnaire have similar perceptions and opinions to the respondents. It could be reasonably argued that this could be so in this study, particularly with respect to research. Although the study investigated most aspects of workload, there was an emphasis on the research function. It is possible that this could have caused those lecturers who had negative opinions and perceptions on the issue to ignore the questionnaire. If this were the case, their responses for certain questionnaire items might have been very different to most of the respondents. In addition, a biased result could originate in the questionnaire itself and misinterpretation of concepts and words. The shortcomings of the questionnaire were highlighted in this chapter.

In view of the above, it would be incorrect to generalise the findings to all academic staff and therefore they will be restricted only to those who responded.

It should also be mentioned that the questionnaire was compiled after considerable review of the literature, but subsequent examination of more literature indicated that changing questionnaire items or the addition of a question would have yielded more complete data.

5.14 CONCLUSION

The findings of this study have shown that academic staff at the PE Technikon are actively involved in all of the three traditional components of academic work: teaching, research, and service. Most staff indicated that their work functions included research, although this was probably over reported. In addition, staff are active in a wide variety of scholarship activities which are aimed at enhancing the quality of teaching. The following are the main highlights of the results:

- Extensive evidence of changes in workload - both quantitative and qualitative
- Extensive evidence of staff being under pressure to upgrade their academic qualifications and to become active in research

- Half the respondents work between 40 and 49 hours per week, and more than one third reported working more than 50 hours
- Those whose main work functions included research reported working longer hours, particularly over 50 hours
- Almost a quarter of the respondents indicated teaching contact hours of more than the institutional guidelines; this is particularly so of principal lecturers
- After the main work functions of teaching and research, administration was the most widely reported workload component, followed in descending order by management, service and entrepreneurial activities
- There was an almost universal involvement in scholarship - the most widely reported were investigations into own disciplines, discussions with colleagues, and learning new computer software programmes
- Staff would like to spend more time on research, entrepreneurial activities, and scholarship activities relating to own discipline and to teaching and learning
- Staff would like to spend less time on administrative functions
- Although 60% of respondents indicated that they had been involved in formal research, the number who had published or presented a conference paper was very much lower
- There was a widespread perception that research involvement is necessary for good teaching
- Research is considered to be more prestigious than teaching and that the institution does not give the same recognition to teaching
- Over 60% of respondents supported the vision of the institution
- The main factors that hinder research involvement were lack of time due to teaching

and other work functions, and complicated applications procedures to obtain funding. Lack of personal interest in research was not a significant cause

- In general, respondents felt confident about their research skills and abilities, although the use and interpretation of statistics was considered to be a problem for many
- More than half the respondents felt confident to supervise postgraduate students.

It was also evident that a number of the findings of this study had also been identified by researchers in other countries (cf. para 3.4.3; para 3.6.1; para 4.3.2; para 4.5; para 4.6.2;).

The next and final chapter of this report will draw final conclusions regarding the research problem and subproblems which directed this study. In addition, recommendations based on the research findings and a possible avenue for future research will be made.

6.1 INTRODUCTION

This final chapter summarises the findings of this study. It will also draw conclusions, furnish recommendations based the results of the research, and suggest areas for future research.

6.2 SUMMARY OF THE RESULTS OF THE RESEARCH

6.2.1 Motivation for the study

Higher education in South Africa is in a state of flux, the reasons for which were described in Chapter 1. This change constituted the point of departure for this study. It was, in particular, the distinctive changes in the pattern of academic work experienced by technikon lecturers that motivated this study. The next paragraphs will return once more to examine the research problem and sub-problems.

6.2.2 The research problem and sub-problems

The research problem and sub-problems were formulated in Chapter 1 (cf. para 1.2) as follows.

This study proposed to identify the work activities of academic staff at the Port Elizabeth Technikon, with particular reference to the research function. Additionally, the study attempted to establish whether academic staff consider themselves to be adequately prepared for this function.

In order to investigate the research problem, the following sub-problems needed to be addressed:

1. What are the changes in higher education, nationally and at the PE Technikon that are impacting upon the work activities of academic staff?
2. What are the functions of academic staff at the PE Technikon?
3. What is the extent of the research involvement of academic staff?

4. What are the barriers to research involvement?

5. What are the developmental needs of academic staff with respect to research?

The research problem and sub-problems were investigated by means of a literature survey, reported in Chapters 3 and 4, and an empirical, descriptive cross-sectional survey using a structured, self administered mail questionnaire as the data collection and generation instrument, the outcome of which was reported in Chapter 5. Chapter 2 described in detail the research approach or strategy and the methods and techniques that were utilised in this study. The following sections of this paragraph will answer the sub-problems that were identified as being critical to the investigation of the research problem.

The first sub-problem:

What are the changes in higher education, nationally and at the PE Technikon that are impacting upon the work activities of academic staff?

This was investigated mainly by means of the literature review, but also by the empirical study..

The first half of Chapter 3 (cf. paras 3.2 - 3.4) described the history, nature and characteristics of technikon education that have shaped the environment in which lecturing staff work. In particular, 1993 proved to be a watershed year for the technikons - they were allowed to award degrees. This had important ramifications for the institutions themselves and their academic staff. Firstly, it led to considerable debate concerning the university status of these institutions and whether or not they should change their name (cf. para 3.5.1, p.27; para 3.5.3, p.31). Secondly, although teaching remains their core function, there is now a far greater emphasis on their research functions than ever before. Thirdly, academic staff, who were originally employed in a teaching capacity based on their experience in industry, are now

being called upon to undertake research and obtain master's and doctoral qualifications (cf. para 3.6.1, p.32). The second half of Chapter 3 (cf. 3.7) explored the specific environment of the PE Technikon where this study was based.

Chapter 4 presented the results of a literature study regarding academic work in HE, most of which originated in other countries, especially the UK, Australia, and the USA. The former two countries were considered to be important since the former Polytechnics and Colleges of Advanced Education also went through similar changes to those of the technikons (cf. para 4.1, p.42).

A review of the literature (cf. para 4.4, pp.59 -62) showed that the changes in HE in South Africa are almost identical to those experienced (and still being experienced) in other countries. The most notable of these include:

1. The quantitative and qualitative expansion of HE
2. Declining resources
3. The move towards a learning paradigm and outcomes based education
4. The emphasis on lifelong learning and personal transferable skills
5. The influence of information technology upon academic work.

These changes have had a direct effect on the day to day life of lecturers working in HE. The most important of which are summarised below (cf. para 4.5, pp.63 - 65).

1. Increased workloads and pressure to do more teaching, research and community service. Administrative functions have also increased considerably. These findings were confirmed by the empirical findings of this study, which showed that 93% of respondents reported either quantitative or qualitative changes, or both, in their workload (cf. para 5.4, p.73).

2. Pressure to improve qualifications and become involved in research. Again the empirical findings showed this to be the case at the PE Technikon (cf. 5.4, pp.75 - 76).
3. Pressure to change traditional teaching methods. This was not investigated in this study.
4. Pressure to be involved in entrepreneurial activities. The empirical findings will be mentioned in paragraph 6.2.2.2.
5. Pressure to become computer literate, also to be mentioned in paragraph 6.2.2.2.

The second sub-problem:

What are the functions of academic staff at the PE Technikon?

The second sub-problem was investigated by both a literature study and the empirical study . A review of the literature, described in Chapter 4 (cf. para 4.2, pp.43 - 52), indicated that academic work entails four activities: teaching, research, service and scholarship. These functions were also found to apply to all technikon lecturers, who are in addition also expected to pursue continuing self-development (cf. para 3.6.2, p.33). The empirical study revealed that academic staff are involved in all of these activities (cf. para 5.5, p.79; para 5.6, p.83). Most respondents reported that their main job function was teaching combined with varying degrees of research (cf. para 5.4, p.74). The literature review had also shown that it was important that technikon lecturers should be not overloaded with teaching, although this was not quantified (cf. par 3.6.2, p.34). One important finding of this study indicated that nearly 25% of academic staff exceed the institutional norms for teaching, and this was particularly obvious amongst the principal lecturers (cf. para5.4, p.77). Confirming what was said in the literature (cf. para 4.5.1, p.63), administration proved not only a universal activity, but one which involved a considerable expenditure of time (cf. para 5.5, p.79). The

management and service functions were shown to increase with the post level of the lecturer, again confirming the findings from other studies (cf. para 4.6.2, p.67). A survey at the Pretoria Technikon (Van Rensburg, 1995) showed that between 55 - 60% of lecturers had been involved in organising short courses. A similar finding was reported at the PE Technikon (cf. para 5.5, p.79). It emerged from the empirical study that almost all academic staff at the institution were involved in a variety of scholarship activities (cf. para 5.6, p.83), the most time consuming of which was keeping up to date with disciplinary knowledge and developments (cf. para 5.6, p.83). Pressure to be computer literate was shown by a significant expenditure of time in maintaining competence in utilising new computer software (cf. para 5.6, p.83). A review of the literature had revealed that when asked, lecturers would prefer to spend less time on teaching and more on research. This was partly the case in this study, while most lecturers would prefer to spend more time on research, only 25% would reduce the time spent on teaching (cf. para 4.6.2, p.68; para 5.7, p.85).

In terms of how many hours lecturers work per week on all their functions, the literature findings repeatedly indicated 45 hours and 55 hours per week (cf. para 4.6.2, p.66). The empirical study at this institution showed that these figures were also reported. It had been suggested in Chapter 3 (cf. 3.7.2.3) that an estimate (based on teaching contact hours) of a normal working week would be 38 - 40 hours. Taking this as a guideline, this study indicated that only 20% work the normal week, 16% work less, but the majority work more than the minimum and 34% of staff reported working more than 50 hours per week. In general, those with research functions more frequently reported working longer hours (cf. para 5.10, pp.94 - 95).

The third sub-problem:

What is the extent of the research involvement of academic staff?

Due to conflicting data, the empirical study failed to determine conclusively the number of staff who had been involved in research. The majority of staff indicated that one of their main job functions was research, but only just over half reported that they had been involved in formal research (cf. para 5.4, p.74; para 5.8, p.87). This discrepancy could have been due to a number of reasons one of which is misinterpretation of the word "research". The study also failed to show conclusively the number of staff who were not interested in research at all, again there was conflicting data. It can be said, however, that they were in a minority (cf. para 5.8, p.90). The literature survey in Chapter 4 (cf. para 4.3.2, p.54) highlighted the need to increase the amount of research into teaching and learning in higher education. The empirical study showed that less than 20% of staff had been involved in action research into teaching and learning, but that overall one third did express an interest in research into teaching and learning (cf. para 5.8, pp. 88 - 90).

The opinions of academic staff at the institution regarding research closely mirrored those identified by the literature study (cf. para 4.3.2; para 4.3.3):

1. The possible erroneous belief that research involvement is necessary for good teaching
2. That research carries more status and prestige compared to teaching
3. That the institution does not give the same recognition to teaching as it does to research.

In Chapters 3 and 4, the review of the literature highlighted the fact that mandating staff to become productive in research should be avoided, and that the best indicator of research

productivity was personal interest and motivation (cf. para 3.4.3, p.27; para 4.6.2, p.68). It would appear that most academic staff at the institution indirectly agreed with this because they were of the opinion that any lecturer could be involved in research, but only if he or she wished it (cf. para 5.9, p.91).

Finally, whilst almost two thirds of staff support the institutional vision to become "...the First Choice Technological University...", a noteworthy one third did not (cf. para 3.7.3; para 5.9, p.91).

The fourth sub-problem:

What are the barriers to research involvement?

This sub-problem was investigated by means of a review of the literature and the empirical study. A study of the literature (cf. para 3.4.3, pp. 25 - 26) showed the following to be factors that can hamper research involvement:

1. Lack of time due to high teaching loads
2. Inadequate resources - human and physical
3. Absence of research experience and expertise
4. Lack of personal motivation
5. Lack of role models and collegial interaction
6. The historical teaching only mission of the technikons

The empirical study showed that there were relatively few serious impediments to research. The most frequently reported barriers to research involvement were lack of time due to teaching loads and other work functions, and complicated application procedures for funding (cf. para 5.11, p.96). A significant number of respondents did, however, report that they had a greater interest in teaching, which could be a reflection of the traditional teaching-only

mission of the technikons (cf. para 5.11, pp. 96 - 97).

The fifth sub-problem:

What are the developmental needs of academic staff with respect to research?

This was investigated by means of the empirical study which found that, in general, respondents reported that they considered themselves to be confident of their abilities in most of the identified research skills (cf. para 5.12, p.98). The areas of weakness that were identified were the use and interpretation of statistics, the application procedures for funding, designing action research, and supervising research students.

6.3 CONCLUSIONS

The main objective of this study was to identify the work activities of academic staff at the PE Technikon, with particular reference to their research function. The outcomes of the study have shown that academic staff at the institution have much in common with their international peers. They have experienced the same changes and pressures and, like their counterparts in the newer universities of the UK and Australia before them, they too have found themselves having to change their alignment from a mainly vocational to an academic direction. To use an oft quoted and frequently abused expression (but which is justified in this instance) - there has been a paradigm shift. Until recently, there was a considerable gap between technikon and university lecturers mainly due to the fact that the former did not have the same academic ethos or background in terms of institutional expectations *vis-a-vis* qualifications, research and scholarship. This study has shown, however, that insofar as this specific study population is concerned, the gap is closing. The work reality for academic staff at the PE Technikon includes all the traditional elements associated with being an academic: teaching, research, service and scholarship. Technikon lecturers are, however, unique when

compared to most university lecturers - they are expected to maintain a close contact with their respective business or industry. This represents an additional workload component which was not investigated in this study.

Research has now become a reality for many staff. This study has shown that in general, not only has this been positively embraced by most academic staff, but there are relatively few serious barriers to research involvement. High teaching loads, often above the institutional guidelines, characterise the workload of a considerable number of staff . As a result, there is little time available for undertaking research.

A further objective of the study was to try and determine if lecturers consider themselves to be adequately prepared for their research function. The outcomes of the empirical study have, in general, found this to be the case, although certain skills still need to be developed. Although the institution can gain encouragement from the positive findings of this study, it also needs to take heed of those that are less positive.

It needs to be underscored that the primary mission of the institution remains teaching - perhaps this should be qualified as "quality teaching and learning", a fact recognised by a number of respondents. It is also notable that over one third of the respondents do not support the institutional vision of becoming "the First Choice Technological University in Southern Africa" - and it would be in the interests of everyone concerned to try and establish the reason for this. It is salient to observe that the vision and mission statements of the institution fail to make explicit this primary orientation towards the provision of quality teaching and learning. Further, the empirical study revealed that the majority of staff were of the opinion that the institution undervalues teaching and that research attracts more recognition and reward. The potential exists for the institution, like many others overseas, to become guilty of "mission

drift" and to overemphasise the research function - with the consequent tensions between research and teaching and the deleterious effects on the quality of the latter. If the institution is to avoid this, it should reaffirm its commitment to quality teaching and learning. In order to safeguard such standards it needs quality lecturers whose worth it will value, nurture, and recognise.

Finally, it was also shown that considerable numbers of staff carry teaching loads that are greater than the institutional guidelines. It is already a fact that in some faculties lecturers who resign are not being replaced and overloading of existing lecturers is therefore a serious threat - the ramifications of which could have serious repercussions on the quality of teaching.

6.4. RECOMMENDATIONS

On the basis of the research findings, the following recommendations are made.

Recommendation 1

Since the study has shown that there is a perception that the institution values research more than teaching, it is suggested that some form of formal recognition for teaching excellence be established. Awards already exist for the "Researcher of the Year" and the "New Researcher of the Year":, similar recognition could easily be introduced for excellence in teaching. Faculties themselves could also establish their own internal awards. It is worth mentioning that similar awards have been instituted in other countries and in South Africa in an effort to recognise, reward, and motivate quality teaching. It follows that criteria (institutional, faculty and perhaps even departmental) for excellence in teaching would need to be identified.

Recommendation 2

Based on the finding that there is a crucial need to increase research outputs in the area of teaching and learning in higher education, it is proposed that the institution and the Faculties

actively promote research into teaching and learning in higher education, specifically the technikon sector. Many staff expressed interest in this field of research and the institution would benefit by capitalising on this intrinsic interest.

Recommendation 3

The study revealed that high teaching loads characterise the academic workload of many staff at the institution and this is proving to be a barrier to research involvement. This finding suggests that if teaching loads were reduced, motivated lecturers might be more amenable to becoming involved in research. It is suggested, therefore, that the institution investigate means of lowering teaching loads for motivated lecturers.

Recommendation 4

The study showed that although many staff would appear confident of their abilities to pursue research, there are certain skills that need developing. Although the institution has embarked upon various staff development strategies to address capacity building in research skills, it needs to be emphasised that this should be an ongoing process aimed at supporting staff in their new role. It is suggested that Faculties and Departments should identify their specific needs (e.g statistical techniques, supervision of post-graduate students) and request the necessary staff development support.

Recommendation 5

The study indicated clearly that teaching remains the primary mission of technikons, a fact substantiated by many of the respondents. The implication of this would suggest that the institution consider the inclusion of explicit value statements with respect to the provision of quality teaching and learning opportunities in its declared mission statement.

Recommendation 6

The study has shown that more than a third of the lecturers in this survey do not support the institutional vision. Based on this finding, it is suggested that the institution determine the reason for this. Without the wholehearted support of the lecturers, the realisation of being "the First Choice Technological University of Southern Africa" is likely to be frustrated.

6.5 AREA FOR FURTHER RESEARCH

This study investigated the academic workload of a sample of technikon lecturers and although limited, the findings would advocate that technikon lecturers be considered academics in the same way as university academic staff. One important element of being an academic is scholarship. In spite of the changes within the technikon sector of HE, the primary mission of these institutions remains teaching. It follows, therefore, that the primary function of lecturers is teaching. This report also drew attention to the debatable question of whether academic staff in HE should be required to obtain a professional teaching qualification (cf. para 4.2.2, p.44). Thus, there are three seemingly dichotomous elements to be reconciled: teaching, scholarship and professionalism. It is suggested that a means of unifying all three would be the development of a practical model that would articulate and actualise the links between them, and which is directed specifically at the needs of lecturers within the technikon sector of higher education.

It is noted that suggestions have already been made that there is a need to investigate how Boyer's scholarship of teaching (cf. para 4.2.4, p.48) could be used and applied to technikon academic staff.

6.6 IN SUMMARY

This final chapter has provided a review of the report of this study: a summary of the main research findings, the conclusions which were drawn, recommendations supported by the research and a direction for future research.

This report opened with a quotation from Alvin Toffler, so it is fitting that in closing he is revisited. On the penultimate page of *Future Shock*, (Toffler,1970) posits that the basic thrust of his book was diagnostic, since diagnosis precedes cure. Throughout the book he notes the personal and social effects of change and the difficulties of adaptation. In an earlier chapter he makes the important point that whilst too much change is damaging, a certain amount is vital to health and the problem is not how to suppress it (which is impossible), but how to manage it.

The point of departure for this study was change, forming the golden thread that unified the literature review and the empirical study. If Toffler is to be heeded, it is vitally important that academic staff are effectively supported to manage their priorities in the face of a changing, globalised higher education environment. In his words (Toffler,1970, p.374) they should be helped "... not merely to survive, but to crest the waves of change, to grow, and to gain a new sense of mastery over their own destinies".

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THIS GROUP OF QUESTIONS REFERS TO YOUR JOB FUNCTIONS IN GENERAL.

QUESTIONS 1 - 8 PLEASE SELECT 1 ANSWER ONLY

1. **When you were originally employed on a full time basis, did you receive a written job description which indicated the job functions expected of you?**

   Yes, with clearly defined job functions ❒

   Yes, but job functions were not clearly defined ❒

   No, my job functions were not indicated at all ❒

2. **Compared with when you were originally employed on a full time basis which of the following most closely describes your current situation?**

   My job functions have not changed at all ❒

   I now perform a greater diversity of job functions (i.e different job functions) ❒

   I have the same job functions, but I am doing more than before (e.g teaching more subjects) ❒

   My job functions have changed both quantitatively and in diversity ❒

3. **Would you say that you are quite clear about what is expected of you in terms of your job functions?**

   Yes ❒

   No ❒

4. **Which of the following best describes your MAIN job functions?**

   Teaching only ❒

   Teaching mainly and some research ❒

   Teaching and research equally ❒

   Research mainly and some teaching ❒

   Research only ❒

5. **Which of the following most closely describes the degree of pressure you are currently under to be involved in research?**

   I am under no pressure at all ❒

   I am under some pressure ❒

   I am under considerable pressure ❒

6. **Which of the following most closely describes the degree of pressure you are currently under to obtain higher academic qualifications?**

   I am under no pressure at all ❒

   I am under some pressure ❒

   I am under considerable pressure ❒

7. **Please indicate your contact hours (as per timetable) per week in the CURRENT SEMESTER.**

Less than 10 ❐

11 - 20 ❐

21 - 25 ❐

26 or more ❐

8. **How many different courses or part thereof are you teaching THIS SEMESTER? Please calculate this from the number of different course codes.**

_____

9. **What is the average number of students in the classes you teach?**

Less than 30 ❐

31 - 50 ❐

51 - 100 ❐

More than 100 ❐

The following is a list of OTHER JOB RELATED FUNCTIONS/RESPONSIBILITIES. Please indicate the frequency of your involvement in each for the period January 1999 to the present.

		Very often	Often	Some - times	Never
10.	Faculty and/or departmental management (e.g strategic planning, implementing departmental strategies)				
11.	Administration (e.g keeping of records, filling in requisitions, entering test marks etc)				
12.	Service to the P.E Technikon (eg serving on committees, running workshops)				
13.	Service to your profession (e.g professional bodies / associations)				
14.	Consultancy work outside the P.E Technikon				
15.	Service to the community (eg community projects -not research)				
16.	Organising and running profit making short courses				
17.	Running other entrepreneurial activities				
18.	Supervising Master's students				
19.	Supervising Doctoral students				

The following are "informal" research activities (or professional development activities) that you may be involved with in order to keep up to date with changes and developments in your field of specialisation and in teaching. Please indicate the frequency of your involvement in each during the period January 1999 to the present.

		Very often	Often	Sometimes	Never
20.	Investigation into your field of speciality (e.g library, internet)				
21.	Discussions with colleagues about new developments in your field				
22.	Investigation into suitable teaching and learning approaches for the subjects you teach (e.g the use of case studies, group discussion, collaborative learning)				
23.	Informal investigation into suitable assessment methods for the subjects you teach				
24.	Learning how to use new software programmes (e.g Word, Excel)				
25.	Learning how to use new teaching technologies (e.g Power Point, multimedia, internet, intranet, video conferencing, Smartboard) to support teaching and learning.				
26.	Attending organised staff development activities(eg. seminars, workshops)				

Relative to the amount of time you are currently spending , please indicate how you would PREFER TO SPEND YOUR TIME on each of the following activities.

		Spend more time than now	Spend the same time as now	Spend less time than now	Spend no time at all
27.	Teaching				
28.	Formal research (of any kind)				
29.	"Informal research" - keeping up to date with developments in your field of specialisation				
30.	"Informal research" - keeping up to date with teaching, learning and assessment in higher education				
31.	Entrepreneurial activities (e.g running short courses)				
32.	Service (departmental and/or institutional)				
33.	Service to your profession				
34.	Service to the community				
35.	Management and administration				

THE NEXT GROUP OF QUESTIONS REFERS TO FORMAL RESEARCH AND RELATED ACTIVITIES DURING THE PERIOD JANUARY 1999 TO THE PRESENT.

36. Have you been involved in formal research?

No ❒

Yes ❒

If you answered NO to this question, please skip questions 37 - 41
If you answered YES to this question, please indicate which of the following research activities you have been involved in.

		Yes	No
37.	I have been involved in research leading to a Master's or Doctoral degree		
38.	I have been involved in individual "ad hoc" research (i.e NOT for degree purposes)		
39.	I have been involved in collaborative departmental ad hoc research (i.e departmental team research)		
40.	I have been involved in an action research project focussed on my teaching		
41.	I have been involved in contract research with industry		

42. During this same period have you published or presented a paper at a conference?

No ❒

Yes ❒

If you answered NO to this question, please skip questions 43 - 50
If you answered YES to this question, please indicate which of the following activities you have been involved in.

		Yes	No
43.	I have published in a peer reviewed journal		
44.	I have published in a non-peer reviewed journal		
45.	I have published in the popular press		
46.	I have submitted an article or articles to a journal but have not yet heard the outcome		
47.	I have refereed an article or articles for a professional publication		
48.	I have delivered a paper at a congress/symposium (national or international)		
49.	I have written or co-authored a book or a chapter of a book		
50.	I have exhibited artefacts (e.g sculpture, paintings etc)		

51. Please estimate the TOTAL HOURS PER WEEK you spend working on ALL YOUR JOB FUNCTIONS COLLECTIVELY (teaching, preparation, assessment and marking, etc, research, and any other job functions).

_____hours/week

52. Which one of the following most closely characterises your research interests? PLEASE SELECT 1 ONLY

- Research does not interest me at all ❒
- Basic or theoretical research ❒
- Applied research - problem solving research, contract research ❒
- Development of new techniques, products, patents , processes ❒
- Research into teaching and learning in higher education ❒
- Action research in your subject/s that you teach ❒

Which academic staff should be involved in research? Please indicate the extent to which you either agree or disagree with each statement.

		Strongly agree	Agree	Disagree	Strongly disagree
53.	All lecturers				
54.	Only senior lecturers and above				
55.	Only principal lecturers and heads of department				
56.	Any lecturer but only if she or he wishes				

The following statements refer to the issue of teaching and research. Please indicate the extent to which you either agree or disagree with each.

		Strongly agree	Agree	Disagree	Strongly disagree
57.	Personal involvement in research is necessary for good teaching				
58.	Students (National Diploma) would benefit from the lecturer's personal involvement in research				
59.	Students (B. Tech and higher) would benefit from the lecturer's involvement in research				
60.	Research, as a job function, carries more prestige than teaching				
61.	In this institution teaching is given the same recognition (e.g promotion, merit awards) as research				
62.	I agree and support the P.E Technikon's vision of a "technological university" and the move towards becoming a research orientated institution				

IN YOUR PARTICULAR DEPARTMENT there may be factors that discourage your involvement in formal research. Please indicate the extent to which you either agree or disagree with each of the following as they apply to your own situation.

		Strongly agree	Agree	Disagree	Strongly disagree
63.	Lack of a research culture in your department				
64.	No personal interest in or motivation for in research				
65.	A greater interest in teaching				
66.	Not enough time due to teaching commitments				
67.	Not enough time due to other job functions and keeping up to date in your subject				
68.	Little interest or encouragement from your head of department				
69.	Lack of personal research experience and expertise				
70.	Lack of research experience and expertise in your colleagues				
71.	Complicated application procedures for obtaining funding				
72.	Inadequate physical resources (equipment, labs etc)				
73.	Little administrative support (typing etc)				
74.	Lack of technical support (research assistants)				

The following are specific research skills. Please rate your confidence in each.

		Very confident	Confident	Not confident
75.	Identifying a suitable research problem			
76.	Choosing an appropriate methodology			
77.	Undertaking a literature search			
78.	Preparing a research proposal			
79.	Applying for funding			
80.	Writing research reports, papers, journal articles			
81.	Writing in English			
82.	Understanding how to use statistical tests			
83.	Interpreting statistical data			
84.	Sampling techniques			
85.	Compiling questionnaires			
86.	Designing an action research project			
87.	Designing an appropriate study (e.g experimental, qualitative, evaluation)			
88.	Supervising postgraduate research students.			

THE FOLLOWING INFORMATION IS BIOGRAPHICAL. PLEASE SELECT 1 ANSWER ONLY .

89. **What is your current position?**

- Lecturer ❒
- Senior lecturer ❒
- Principal lecturer ❒

90. **Please indicate in which faculty you are employed**_____

91. **How long have you been in full time employment at the P.E Technikon?**

- 1 -4 years ❒
- 5 - 9 years ❒
- 10 - 14 years ❒
- 15 - 19 years ❒
- More than 20 years ❒

92. **What is your HIGHEST academic qualification?**

- National Diploma (or equivalent) ❒
- Higher National Diploma(or equivalent) ❒
- M. Dip. Tech ❒
- B. Tech ❒
- M.Tech ❒
- D.Tech ❒
- Bachelor's degree ❒
- Honours degree ❒
- B. Ed ❒
- Master's degree ❒
- Doctoral degree ❒

93. **If your highest qualification is at Master's level (any type), please indicate which category it is.**

- Research only ❒
- Taught content only ❒
- Taught content and research 50:50 ❒

94. **Please can you tell me your age? (Yes I know no-one likes answering this one, but I really do need the information)**

- 20 - 30 ❒
- 31 - 40 ❒
- 41 - 50 ❒
- More than 50 ❒

95. **Do you have any comments that you would like to make?**

_____

_____

THANK YOU ONCE AGAIN FOR TAKING THE TIME TO ANSWER THIS QUESTIONNAIRE.

If you would like to receive a summary of the findings of this research please tick the box . ☐

PRE-TESTING THE QUESTIONNAIRE

Thank you for assisting me with pre-testing the questionnaire.
The aim of the pre-testing is to increase validity and in particular the response rate.

Please complete the questionnaire and then fill in the evaluation form below.

1. How long did you take to complete the questionnaire?_____mins.

2. Were there any questions you did not understand/ wording was unclear?
If so please specify which and what the problem was?

_____

_____

_____

_____

_____

3. Did you at any time feel uneasy or uncomfortable answering any of the questions
(were they of a sensitive nature?)? If so please specify.

_____

_____

_____

4. Do you think the questionnaire too long, if so please make suggestions?

_____

_____

5. Do you think that there are any questions that could be added
(have I missed anything important?). If so please specify.

_____

_____

_____

6. What do you think of the ordering of the questions?
Could they be ordered more effectively? I particularly want to stimulate interest
in the first group of questions, thus motivating the respondent to complete the questionnaire.

_____

_____

_____

_____

7. What do you think of the physical layout of the questionnaire.....easy to read and complete? Could it be made more attractive? Any suggestions?

_____

_____

8. Please can you read Letter 1 (to be sent in advance of the questionnaire). The purpose is to increase response rates by hopefully arousing the interest of the respondent. Do you think it has achieved this ?
Have you got any suggestions or comments?

_____

_____

_____

_____

9. Please can you read Letter 2 (to accompany the questionnaire).
Are the instructions and explanations clear? Any suggestions?

_____

_____

_____

14th March 2000

Dear colleague

I am conducting a research project for an M. Phil degree in Higher Education through the University of Stellenbosch and at the beginning of April I will be sending you a questionnaire to complete.

I am investigating the job profile of academic staff at the Technikon. The questions will focus on a number of different areas of your job function, including research and related activities. I shall be asking both factual questions and ones about your opinions and views regarding research involvement. I know that the whole question of technikon lecturers being involved in research is a very thorny one. In the questionnaire **you will be able to state your opinions about the matter**.

I know that your time is valuable and in short supply, but I do want to hear from **you** and what you think about your job functions. This is an opportunity for you to have your say and air your views about a number of job related issues.

You have my personal guarantee that your responses will remain confidential. Your responses will only be used to obtain a broad overview of what academic staff are doing in terms of job functions and as such **individual responses will not be mentioned in the report.** In addition, I will be the only person handling your returned questionnaire, and once the data has been collected and entered on the computer it will be shredded.

Please contact me if you have any questions at all. My e-mail and phone number are included.

Thanking you in advance.

Iona Ruscheniko
Department of Radiography
Applied Science

Tel: ext. 3450
ionar@ml.petech.ac.za

Promoters
Prof. Eli Bitzer
Dr. Huibré Boshoff

QUESTIONNAIRE TO LECTURERS AT THE P.E TECHNIKON

27th March 2000

Dear colleague
As indicated in my previous letter of 14th March, I am conducting a research project for an M. Phil in Higher Education and I am appealing for your help...in the form of a few minutes of your time to answer the questionnaire.

The aim of the questionnaire
The aim is to obtain information about the job related activities of academic staff. The questions will focus on the following areas:

1. Your job functions and activities
2. Your activities relating to keeping up to date in your field of specialisation
3. Your research activities during the period Jan 1999 to the present
4. Biographical information.

Confidentiality
All information obtained will be treated as ***strictly confidential*** and will only be used for research purposes and I will be the only person who has access to your responses. Once the research is finished all the questionnaires will be shredded. As you can see there is an identification number on the first page of the questionnaire, this is for follow up purposes should I need to contact you.
I would also like to assure you that the research is being initiated entirely by myself in my own individual capacity .

Instructions for answering the questionnaire
Please indicate your response by marking the most appropriate block. A tick ✔ or a cross ✘ will be fine, but please write in pen or ball point.. Some questions require selecting 1 response only, others require you to respond to each statement. This will be clearly indicated in the questionnaire.

Time needed to answer the questionnaire
It should take about 15 - 20 minutes (or even less) to complete as most of the questions only require a tick or cross.

Return date: 18th April
Please return the questionnaire in the envelope provided, using the internal mail system.

If you have any questions that you wish to ask, please do not hesitate to contact me either in person, by phone or e-mail.
ionar@ml.petech.ac.za
Tel: ext 3450
Room 15 in the Health Offices Block

Thanking you in advance for taking the time to answer the questionnaire.

Iona Ruscheniko
Department of Radiography
Applied Science

14TH April 2000

Dear Colleague

This is to jog your memory about the questionnaire that I sent you at the beginning of April. It will not take much of your time to complete– only about 15 minutes.

I believe that what we do as lecturers, in particular the diversity of our functions and how hard we work needs to be documented. What are your views on being involved in research, are you under pressure to upgrade your qualifications, are you interested in research, are you confident about undertaking research – these are some of the questions my research wants to answer.

These issues affect you directly, and this is an opportunity for you to say what you think.

If you have returned your questionnaire, I apologise for pestering you.

Many thanks, and I am counting on your positive response.

Iona Ruscheniko
Department of Radiography
Applied Science
Tel: ext 3450
ionar@ml.petech.ac.za

From: IONA RUSCHENIKO
To: Andre Du Plessis, ANTONIE GEYERA, Charlie Reyno...
Date: Tue, Apr 18, 2000 11:58 AM
Subject: Desperate plea - questionnaire

To all those in Civil who haven't returned their questionnaire;

I am down on my knees .....please complete and return it to me. I have received only 8 from your faculty.

If you have lost/thrown it away, let me know and I will happily supply another.

If you feel uncomfortable with the number at the top of the questionnaire - tippex it out.

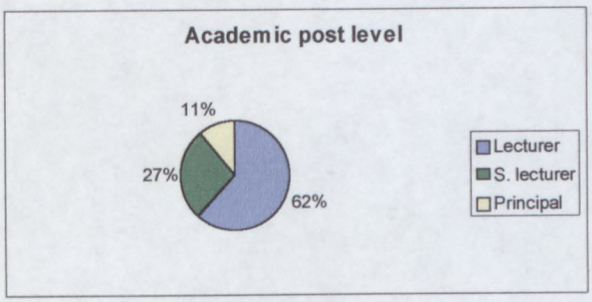
But please -- fill it in.

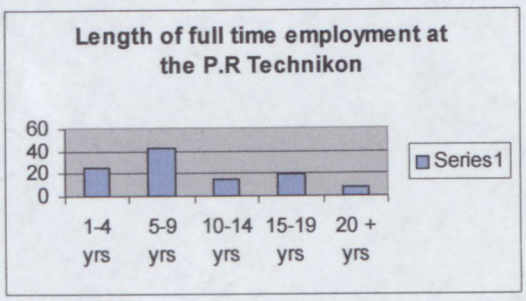
The more I get returned, the more representative will be the results and the more likely that the powers that be will take notice.

Thank you!

Iona
PS I will not pester you again!

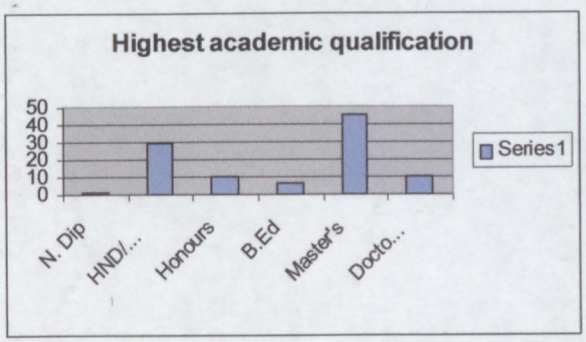
Biographical data of respondents obtained from questions 89 - 94.

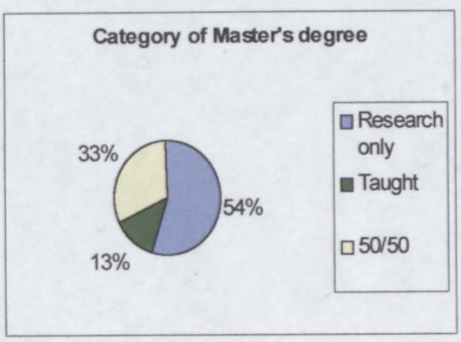




Academic post level

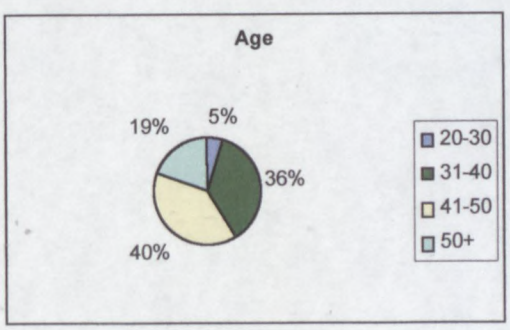
Length of full time employment at the P.E Technikon

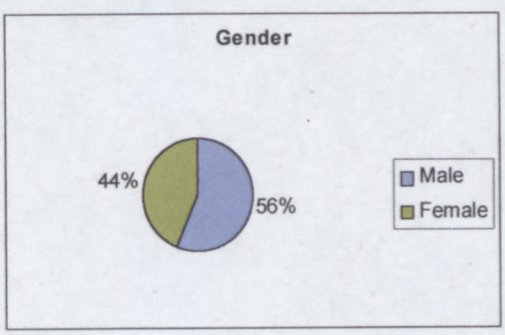




Academic qualifications

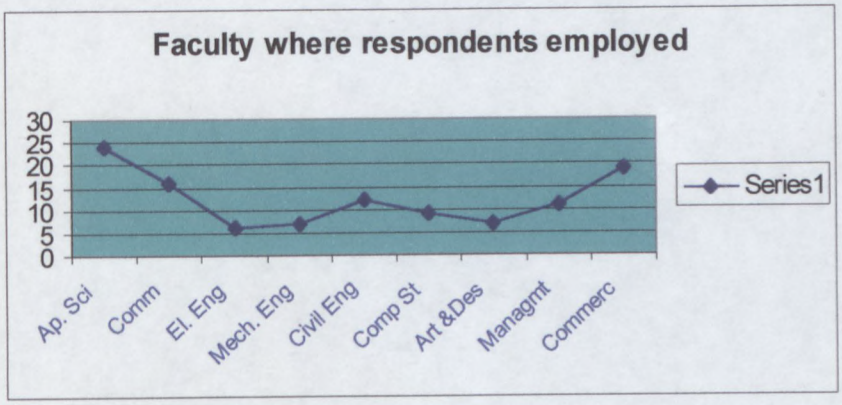
Type of Master's degree





Age of respondents

Gender of respondents



Faculty where respondents were employed

QUESTIONS 1 - 8

Question 1 (n=107)
When you were originally employed on a full time basis, did you receive a written job description which indicated the job functions expected of you?

Sample	Count	%
Yes, with clearly defined functions	14	**13%**
Yes, but functions not clearly defined	48	**45%**
No	45	**42%**

Question 2 (n=108)
Compared with when you were originally employed on a full time basis which of the following most closely describes your current situation?

Sample	Count	%
My job functions have not changed	8	**7%**
I now perform a greater diversity of job functions	35	**32%**
I have the same job functions, but am doing more than before	15	**14%**
My job functions have changed quantitatively and qualitatively	50	**46%**

Question 3 (n=107)
Would you say that you are quite clear about what is expected of you in terms of your job functions?

Sample	Count	%
Yes	85	**79%**
No	22	**21%**

Question 4 (n=106)
Which of the following best describes your main job functions?

Sample	Count	%
Teaching only	23	**22%**
Teaching mainly - some research	67	**63%**
Teaching & research equally	15	**14%**
Research mainly - some teaching	1	**1%**
Research only	0	**0%**

Question 5 (n= 108)
Which of the following most closely describes the degree of pressure you are currently under to be involved in research?

Sample	Count	%
I am under no pressure	15	**14%**
I am under some pressure	53	**49%**
I am under considerable pressure	40	**37%**

Question 6 (n=108)
Which of the following most closely described the degree of pressure you are currently under to obtain higher academic qualifications?

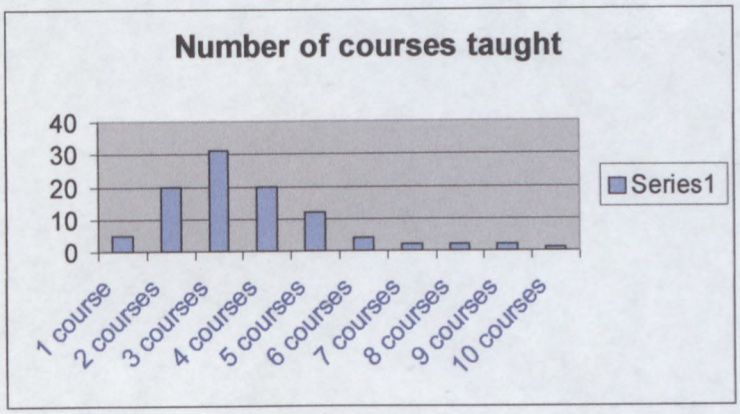
Sample	Count	%
I am under no pressure	26	**24%**
I am under some pressure	51	**47%**
I am under considerable pressure	31	**29%**

Question 7 (n=107)
Please indicate your contact hours (as per timetable) per week in the current semester.

Sample	Count	%
Less than 10	7	**7%**
11 - 20	76	**71%**
21-25	22	**21%**
26 or more	2	**2%**

Question 8 (N=
How many different courses or part thereof are you teaching this semester?

Number of courses taught in the current semester



Question 9 (n=107)
What is the average number of students in the classes you teach?

Sample	Count	%
Less than 30	40	**37%**
31 - 50	44	**41%**
51 - 100	22	**21%**
More than 100	1	**1%**

QUESTIONS 10 - 35
Questions 10 - 19
The following is a list of other job related functions/responsibilities. Please indicate the frequency of your involvement in each for the period January 1999 to the present.

Function	V. often		Often		Sometimes		Never	
Management (n=105)	14	**13%**	20	**19%**	56	**53%**	15	**14%**
Administration (n=106)	39	**37%**	49	**46%**	16	**15%**	2	**2%**
Service to the P.E Technikon (n=106)	6	**6%**	27	**25%**	50	**47%**	23	**22%**
Service to profession (n=105)	6	**6%**	25	**24%**	42	**40%**	32	**30%**
Consultancy work (n=105)	5	**5%**	12	**11%**	46	**44%**	42	**40%**
Service to the community (n=103)	3	**3%**	8	**8%**	53	**51%**	39	**38%**
Organising short courses (n=104)	3	**3%**	15	**14%**	42	**40%**	44	**42%**
Other entrepreneurial activities (n=104)	1	**1%**	6	**6%**	27	**26%**	70	**67%**
Supervising Master's students(n=105)	3	**3%**	13	**12%**	19	**18%**	70	**67%**
Supervising Doctoral students (n=104)	2	**2%**	1	**1%**	2	**2%**	99	**95%**

QUESTIONS 20 - 26

The following are informal research activities (or professional development activities) that you may be involved with in order to keep up to date with changes and developments in your field of specialisation and in teaching. Please indicate the frequency of your involvement in each during the period January 1999 to the present.

Activity	V. often		Often		Sometimes		Never	
Investigation into your field/discipline (n=107)	49	46%	30	28%	25	23%	3	3%
Discussions with colleagues (n=107)	23	21%	47	44%	34	32%	3	3%
Investigation into teaching (n=107)	26	24%	28	26%	49	46%	4	4%
Investigation into assessment methods(n=107)	15	14%	37	35%	46	43%	9	8%
Learning new software (n=107)	28	26%	37	35%	40	37%	2	2%
Learning to use technologies (n=107)	20	19%	26	24%	49	46%	12	11%
Attending development activities (n=107)	6	6%	26	24%	62	58%	13	12%

QUESTIONS 27 - 35

Relative to the amount of time you are currently spending, please indicate how you would prefer to spend your time on each of the following activities.

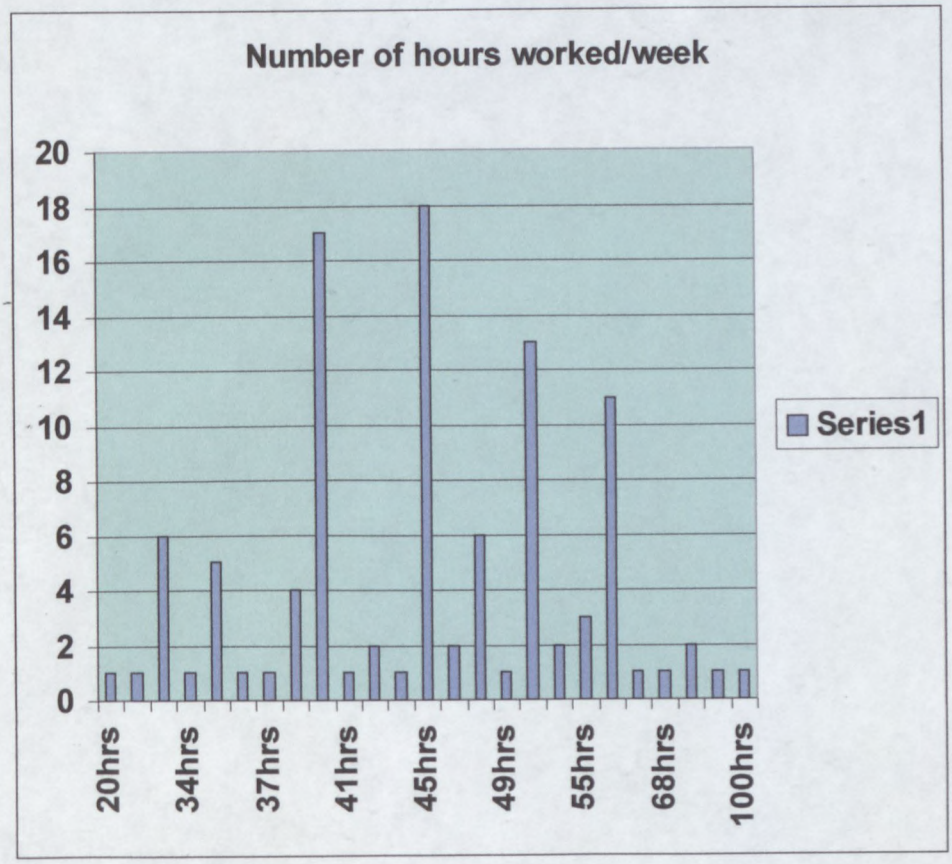
Activity	More time		Same time		Less time		No time	
Teaching (n=107)	10	9%	68	64%	28	26%	1	1%
Formal research (n=106)	69	65%	16	15%	6	6%	15	14%
Keeping up to date in own discipline (n=107)	79	74%	25	23%	3	3%	0	0%
Keeping up to date with teaching/learning/assessment(n=105)	49	47%	51	49%	4	4%	1	1%
Entrepreneurial activities(n= 104)	48	46%	37	36%	3	3%	16	15%
Service to institution/department(n=103)	9	9%	64	62%	17	17%	13	13%
Service to profession(n=104)	25	24%	67	64%	5	5%	7	7%
Service to the community(n=104)	28	27%	59	57%	6	6%	11	11%
Management and administration(n=105)	2	1%	53	50%	41	39%	9	9%

QUESTIONS 36 - 50

This group of questions refers to formal research and related activities during the period January 1999 to the present.

Activity	Yes		No	
Have you been involved in formal research?(n= 108)	63	58%	45	42%
Research leading to an M or D degree(n=63)	44	70%	19	30%
Individual "ad hoc" research(n=63)	35	56%	28	45%
Departmental ad hoc research(n=63)	22	35%	41	65%
Action research into teaching (n=63)	11	17%	52	83%
Contract research with industry(n=63)	21	33%	42	67%
Have you published or presented a paper(n=108)	33	31%	75	69%
Peer reviewed journal(n=33)	14	42%	19	58%
Non-peer reviewed journal(n=33)	7	21%	26	79%
In popular press (n=33)	7	21%	26	79%
Submitted an article, but no outcome yet(n=33)	7	21%	26	79%
Refereed a journal article(n=32)	5	16%	27	84%
Delivered a paper(n=33)	26	79%	7	21%
Written or co-authored a book/chapter(n=33)	8	24%	25	76%
Exhibited artefacts(n=33)	1	3%	32	97%

QUESTION 51
Please estimate the total hours per week you spend working on all your job functions collectively.
(n=108)



Range 81, between 20 and 100 hours/week
Bimodal distribution 40 (17) & 45 (18) - but also 50(13) and 60(11)
77/103 (75%) fell between 40 - 60 hours

QUESTION 52
Which of the following most closely characterises your research interests?
(N=107)

Activity	Count	%
No interest in research	8	7%
Basic/theoretical research	8	7%
Applied/contract research	42	39%
Development of products/patents	11	10%
Research into teaching/learning	13	12%
Action in research in teaching	25	23%

QUESTION 53- 56
In your opinion which academic staff should be involved in research?

Post level of lecturer	Strongly agree		Agree		Disagree		Strongly disagree	
All lecturers (n=99)	25	25%	23	23%	34	34%	17	17%
Only senior lecturers & above (n=95)	6	63%	13	14%	45	47%	31	33%
Only principal lecturers & above(n=95)	9	9%	12	13%	37	39%	37	39%
Any lecturer but only voluntarily (n=105)	53	50%	23	22%	17	16%	12	11%

Table collapsed into two categories " agree and disagree"

Post level of lecturer	Agree		Disagree	
All lecturers (n=99)	48	48%	51	52%
Only senior lecturers & above (n=95)	19	20%	76	80%
Only principal lecturers + above(n=95)	21	22%	74	79%
Any lecturer but only voluntarily(n=105)	76	72%	29	28%

QUESTIONS 57 - 62
The following statements refer to the issue of teaching and research. Please indicate the extent to which you agree or disagree with each.

Statement	Strongly agree		Agree		Disagree		Strongly disagree	
Involvement in research is necessary for good teaching(n=107)	31	29%	46	43%	24	22%	6	6%
ND students would benefit from lecturer's research(n=107)	33	31%	48	45%	20	19%	6	6%
BTech + would benefit from lecturer's research(n=107)	53	50%	47	44%	5	5%	2	2%
Research carries more prestige than teaching(n=107)	29	27%	33	31%	37	35%	8	7%
In this institution teaching is given the same recognition as research(n=107)	3	3%	17	16%	34	32%	53	50%
I agree and support PET vision(n=107)	23	21%	44	41%	28	26%	12	11%

Table collapsed to two categories "agree and disagree"

Statement	Agree		Disagree	
Involvement in research is necessary for good teaching(n=107)	77	72%	30	28%
ND students would benefit from lecturer's research(n=107)	81	76%	26	24%
BTech would benefit from lecturer's research(n=107)	100	93%	7	7%
Research carries more prestige than teaching(n=107)	62	58%	45	42%
In this institution teaching is given the same recognition as research(n=107)	20	19%	87	81%
I agree and support PET vision(n=107)	67	63%	40	37%

QUESTIONS 63 - 74

In your particular department there may be factors that discourage your involvement in formal research. Please indicate the extent to which you either agree or disagree with each statement.

Statement	Strongly agree		Agree		Disagree		Strongly disagree	
Lack of a research culture(n=106)	14	13%	22	21%	41	39%	29	27%
No personal interest in research(n=106)	6	6%	26	25%	39	37%	35	33%
A greater interest in teaching(n=107)	15	14%	47	44%	40	37%	5	5%
Not enough time due to teaching commitments(n=107)	45	42%	47	44%	14	13%	1	1%
Not enough time due to other job functions(n=107)	40	37%	50	47%	14	13%	3	3%
Little encouragement from HOD(n=105)	13	12%	17	16%	44	42%	31	30%
Lack of personal research experience(n=107)	4	4%	43	40%	43	40%	17	16%
Lack or research experience in colleagues(n=104)	1	1%	31	30%	56	54%	16	15%
Complicated application procedures for funding(n=104)	25	24%	50	48%	20	19%	9	9%
Inadequate physical resources(n=105)	17	16%	25	24%	47	45%	16	15%
Little administrative support(n=104)	14	13%	41	39%	41	39%	8	8%
Lack of technical support(n=103)	24	23%	40	39%	36	35%	3	3%

Table collapsed to two categories "agree and disagree"

Statement	Agree		Disagree	
Lack of a research culture(n=106)	36	34%	70	66%
No personal interest in research(n=106)	32	30%	74	70%
A greater interest in teaching(n=107)	62	58%	45	42%
Not enough time due to teaching commitments(n=107)	92	86%	15	14%
Not enough time due to other job functions(n=107)	90	84%	17	16%
Little encouragement from HOD(n=105)	30	29%	75	71%
Lack of personal research experience(n=107)	47	44%	60	56%
Lack or research experience in colleagues(n=104)	32	31%	72	69%
Complicated application procedures for funding(n=104)	75	72%	29	28%
Inadequate physical resources(n=105)	42	40%	63	60%
Little administrative support(n=104)	55	53%	49	47%
Lack of technical support(n=103)	64	62%	39	38%

QUESTIONS 75 - 88
The following are specific research skills. Please rate your confidence in each.

Research skill	Very confident		Confident		Not confident	
Identifying a research problem(n=105)	28	27%	52	50%	25	24%
Choosing a methodology(n=105)	21	20%	52	50%	32	30%
Undertaking literature search (n=105)	38	36%	47	45%	20	19%
Preparing a proposal(n=105)	25	24%	56	53%	24	23%
Applying for funding (n=105)	9	9%	39	37%	57	54%
Writing reports etc (n-104)	23	22%	45	43%	36	35%
Writing in English (n=105)	48	46%	51	49%	6	6%
Use of statistical tests (n=105)	12	11%	40	38%	53	50%
Interpreting statistics (n=105)	12	11%	44	42%	49	47%
Sampling techniques (n=105)	18	17%	46	44%	41	39%
Compiling questionnaires (n=105)	15	14%	49	47%	41	39%
Designing action research (n=104)	8	8%	50	48%	46	44%
Designing a study (n=105)	12	11%	52	50%	41	39%
Supervising research students (n=105)	13	12%	46	44%	46	44%